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# Standard (Ind.) New Resale Contract Holds Dealers to Posted Prices

CHICAGO, Nov. 5

STANDARD OIL CO. of Indiana is recognizing the growing importance of the individual service station owner in its new form of resale agent contract which makes the station owner an authorized agent of the Standard, selling gasoline and other petroleum products at a stated commission, with the station operated in accordance with rules of the Standard company.

For dealers with a larger volume of business, commissions are more than for the smaller dealer. The contract is termed the "Authorized Agents Agreement."

In the new form of contract discounts for quantities of gasoline sold lag behind those of the Quantity Discount Agreement by half a cent for each bracket. It is understood, however, this is offset by terms set forth in separate individual contracts with each dealer by which the company pays him a lease for his property, as it has done in the past.

That the authorized agent is to sell his products at a price established by the Standard Oil Co. is stipulated in the new form of contract, the first time, as far as is known, this stipulation has been made. Price cuts cannot be made by the authorized dealer on his own initiative.

Although there is no exclusive territory given the "authorized agent," as is done in a somewhat similar form of contract The Texas Co. has made with its dealers, starting last June, some oil men believe the purpose of the contract is to give the oil company an opportunity to concentrate its dealer trade in the hands of the better merchandisers and give up some of its former small and unsatisfactory dealer trade.

When a private filling station owner signs the new contract he leases his place of business to the Standard Oil Co. and employs himself to them on a commission basis. The more gallons he sells the wider his commission will be (as under the Q.D.A.) but the range is different. His minimum profit on gasoline now will be 2½ cents a gallon, his maximum 4½ cents, plus what he can make in profits on motor oils and whatever he can make the company pay him for the lease on his establishment. The rent will vary in each case, of course.

WITH this agreement made, Standard supplies his station with gasoline and oil, on consignment. In other words, the first dump does not cost anything at the time, but the agent pays for all replenishments, less his commission on what he has sold, cash on delivery.

The agent may extend credit to customers whose names appear on a list the company gives him, and the company bears the credit risk. The dealer takes the chances on other credit risks. If some of the company's prescribed credit customers happen to be enjoying the retail Q. D. A. discount, it does not alter the dealer's commission. He gets his 2½ cents a gallon just the same, or whatever his commission may be.

The dealer may handle automobile accessories if he wants to, but must not let it consume the company's time. His first duty is to petroleum. Increasing commissions in proportion to volume of gasoline sales are as follows:

If the dealer sells less than 6000 gallons a month his commission is 2½ cents; if he sells more than 6000 gallons it is 3 cents; if he sells more than 10,000 gallons it is 3½ cents, and if he sells more than 15,000 gallons it is 4½ cents. All these commissions have "annual extensions." If a small dealer fails in some month to sell 6000 gallons but sells 72,000 gallons in 12 months he gets his commission just the same.

Agents' buying price and selling price are both prescribed. The only way they can increase their revenue is to increase their sales. The new agreement does not take the tank wagon price into consideration at all. Under it, the dealer is concerned with the retail price and his commission only. When a dealer signs it he may forget entirely about the old tank wagon Q.D.A. for, to him, it is a dead issue.

THE commissions set down in the new contract do not look like the old wide Q.D.A. spreads, with a minimum of 3 cents a gallon and a maximum of 5 cents, actually running up as high as 7 cents in special cases. On the face of it, there seems to have been a shrinking in the dealer's margin. The key to the riddle is in the lease arrangement.

Few of the new contracts, if any, have been given to dealers in Chicago. Those who have them now, or in prospect, are said to be new establishments or newly acquired ones. For the most part the old Q.D.A. is used here as a basis of bargaining.

**Articles on the proceedings at the convention of the American Oil Men's Association convention at West Baden, Ind., Nov 2, 3 and 4, are to be found on Pages 27, 28 and 53 of this issue.**

It is not really in force, Chicago is considered an exception to all rules of price structure and marketing ethics.

Standard Oil men say the new contract will save the expense of new stations that might be built in places where the company desired outlet for its product. With the "Authorized Agents Agreement" desirable establishments already in existence may be used with mutual advantage to the company and the owner.

Standard of Indiana's plan is somewhat similar to The Texas Co. plan (NATIONAL PETROLEUM NEWS, June 15, 1927, page 20). The Texaco plan gives the dealer who owns or leases his own grounds and stations, constructed in accordance with Texas Co. specifications, a 3-cent spread on gasoline with no Q.D.A., advantage of extensive Texas Co. advertising, and no competition from company-owned stations of the Texas Co.

The Texas Co.'s certified service station plan includes standard methods of operating stations for the sale of its products exclusively, even to the uniform the attendant wears. It includes a uniform flat margin on gasoline, an exclusive territory as far as this company's competition is concerned and the benefits of the company's advertising of the plan to the public.

## Standard of Indiana's New Form of Resale Contract

**Authorized Agents Agreement**

It is hereby agreed between the Standard Oil Co., an Indiana corporation, first party, and ..... of ..... second party, that second party shall act as authorized agent for the first party at service station located at ....., for the sale of gasoline, motor fuel, lubricants and petroleum products generally.

1. Second party shall give his exclusive time and attention to said employment (except as hereinafter specified) and shall operate said service in compliance with the rules and regulations of first party in a manner satisfactory to and at the will of said first party.

2. First party shall keep said service station fully supplied with gasoline, motor fuel, lubricants and other petroleum products which second party shall sell for cash for the account of first party, at prices established by it, remitting therefor (less his earned commission) at the time the supply of each product is replenished. Second party may extend credit for products purchased to persons whose names are furnished him in writing by party of the first part as entitled to credit but second party shall be personally responsible for payment in cash for sales to all other persons.

3. Second party shall have the privilege of handling and dealing in automobile accessories on said premises but shall not permit said business to interfere with his sales of the products of first party or his duties under the agreement while in first party's employment.

4. In consideration of said services the first party agrees to pay to the second party a commission of two and one-half (2½) cents per gallon for gasoline sold by second party for first party at said service stations to be paid upon all such sales at the time of replenishment.

5. Should sales of gasoline in any one calendar month amount to more than six thousand (6000) gallons, an additional commission shall be paid in accordance with the following schedule—to be paid not later than the fifteenth (15th) of the month following:

| | Per gal. |
|---|---|
| Over 6,000 gals. per month | ½c |
| Over 10,000 gals. per month | 1 c |
| Over 15,000 gals. per month | 2 c |

At the end of the year the whole amount of gasoline sold during the year will be computed and a commission additional to the 2½c per gallon paid thereon in case his entire sales amount to the quantity shown below and at the rates of commission shown, less any amounts in excess of 2½c per gallon that may have been paid monthly in accordance with the monthly additional commission schedule shown above:

| | Per gal. |
|---|---|
| Over 72,000 gals. per year | ½c |
| Over 120,000 gals. per year | 1 c |
| Over 180,000 gals. per year | 2 c |

Motor oils, greases, and specialty products shall be sold in accordance with "Retail Price List" attached hereto and second party shall be paid commissions representing the difference between such retail prices and "Wholesale Price List" also attached hereto. Commissions being paid at the time of remittance for and replenishment of these products. An additional commission on motor oils and greases based on quantity sold will be paid at end of six months' period as outlined in Wholesale Price List hereto attached . Either "retail" or "wholesale" prices are subject to change at any time by first party.

6. Second party shall be responsible for all loss or damage to products furnished by first party while in his possession as agent and shall account for said products as if sold.

Dated this ..... day of ..... 192.....

STANDARD OIL COMPANY (INDIANA)

Approved as to Form By.....
Manager

.....
Attorney for Standard Oil Company (Indiana)

.....
Second Party

# Collins Remains as Umpire to Keep Eye on Wildcats

ALMOST a year to the day from the time the Seminole operators started their conferences to restrict drilling and production, they met again Nov. 4, for what promised to be the final conference to decide what to do after the next day, when the agreement-corporation commission order was to terminate.

Although Umpire Ray M. Collins told the meeting that there didn't seem to be much more for him to do, the operators voted unanimously to continue the agreement until Jan. 1. Thus, the umpire and the committee of five will continue to function.

Some parts of the agreement are obsolete. The maximum figure of 450,000 barrels daily for the district permitted under the agreement is one of the dead issues. For several weeks the umpire's staff has daily gone through the formality of computing potential, allowed and actual production of each lease. The three classes of figures were identical with each other. The "allowed" production in each instance was all the lease could make. Umpire Collins released his proration staff, effective Nov. 5, and nothing more along that line will be done.

Another phase of the agreement that is "out" is the restriction on shooting. The lid has been lifted altogether except on Little River, where wells will be shot on permission from the committee. The other four fields of the district are being shot as the operators please.

What, then, is there for the umpire to do? The question was raised in the meeting. It was answered by several, among them being R. M. Young, president of the Carter Oil Co.; W. G. Skelly, president of the Skelly Oil Co.; Dana H. Kelsey, general manager of the Prairie Oil & Gas Co. Their contention was that while things look brighter, owing to the decline of Seminole fields, there are several dangerous spots in the district yet—wildcats that may open new pools—and that it would be well to have the machinery of restriction ready if anything should break loose.

THE very next day, just to establish these gentlemen as prophets, the Independent Oil & Gas Co. broke loose with a wildcat south of the Little River field which brings on more talk.

Umpire Collins told the operators that the field was slipping rapidly, that in October, in spite of about 100 completions and the shooting of about 125 wells, the district lost 60,000 barrels on its daily average production. He made an estimate that the district will end the year with a daily production of around 325,000 barrels.

THE umpire made some recommendations. The Little River field has been disappointing to the operators. They are doing no more, he said, than "swapping dollars," and some of them are not even that fortunate. He advised a revision of the well spacing that has been followed in case any new pools are opened and suggested a systematic program of two wells to each 40 acres. The plan heretofore has been one well to each 10 acres.

Further, the umpire suggested the natural decline in the Seminole district could be offset by intensive drilling of other pools in the district, should they be opened by wells that now look promising. He urged a general holding back all along the line.

The meeting was quickly concluded. There was little discussion on any of the topics raised, in contrast to those sessions of a year ago when they closed the doors, barred the gentlemen of the press and arrived at any agreement by a series of compromises.

# Technical Meetings Take All the Time At A. P. I. Chicago Meeting

CLEVELAND, Nov. 7

THERE will be but one general session during the three-day eighth annual meeting of the American Petroleum Institute to be held at the Stevens hotel, Chicago, Dec. 5, 6 and 7.

This will be at 2.30 p.m. on Tuesday, Dec. 6. The meeting will be the occasion for the president's address by President E. W. Clark, the report of the board of councillors and the election of directors. The story of Petroleum, a six-reel moving picture produced under the direction of the U. S. Bureau of Mines in co-operation with the American Petroleum Institute will be shown at this meeting. All the rest of the time will be devoted to meetings on technical subjects.

The following committees will hold meetings in connection with the Institute meeting, the exact time and meeting place of each to be designated later: Public relations; gas conservation; oil pollution; uniform methods of accounting; Committee D-2 A. S. T. M.; vapor pressure; tank car calibration; fire prevention; railroad transportation; tank car mechanical committee; automotive transportation; standardization of belting; standardization of specifications for steel and iron pipe for oil country tubular goods; standardization of rig irons; standardization of wire rope and manila cordage; standardization of standard rigs and derricks; standardization of rotary drilling equipment; standardization of pumping equipment and engines; standardization of cable tool joints; standardization of oil field storage and production tanks; standardization of oil field boilers.

The board of directors will meet in a private dining room in the Stevens hotel at 10.30 Monday morning, Dec. 5, and will have luncheon together at noon.

Tuesday morning, Dec. 6, the board of councillors will meet to nominate candidates for election to the board of directors. The only general session will be held Tuesday afternoon and the program for Tuesday evening is to be announced later.

The program of the meetings follows:

### Wednesday, Dec. 7

**Morning**

10.30 a.m. Meeting of new Board of Directors. (Private Dining Room No. 1.)
Luncheon for members of the board at noon. (Private Dining Room No. 2.)

10.00 a.m. Group Meetings:

**Group 1**—General Topic: MOTOR FUEL.
search at the U. S. Bureau of Standards During the Current Year:
"An Interpretation of A. S. T. M. (North Ball Room.)
Report on Co-operative Motor Fuel Re-Distillation Test," O. C. Bridgeman and C. S. Cragoe.
"Some Factors in Engine Acceleration," R. Best and J. O. Eisinger.
"A Detonation Survey," H. K. Cummings.
"A Comparison of Methods of Measuring the Knock Characteristics of Fuels," Dr. Graham Edgar, Ethyl Gasoline Corporation.
General Discussion.

**Group 2**—General Topic: STANDARDIZED OIL FIELD EQUIPMENT. (Grand Ball Room.)
Condensed Reports of the following Standardization Committees:
Committee on Belting for Oil Country Use.
Committee on Oil Field Boilers.
Committee on Rig Irons.
Committee on Standard Rigs and Derricks.
Committee on Wire Rope and Manila Cordage.

SPECIAL PAPERS:
"Some advantages of Standardized Rigs and Derricks and Rig Irons," C. D. Watson, Carter Oil Co. (Illustrated with slides.)
"A. P. I. Belting" F. O. Prior, Midwest Refining Co. (Illustrated with slides.)
"Evaluating Wire Rope Life" (Speaker to be announced.)
General Discussion.

*Note*—The sessions on standardization this year will be of special interest to field superintendents, etc. and will be confined principally to results gained from the use of A.P.I. standards.

**Group 3**—General Topic: OIL ACCOUNTING. (West Ball Room.)
Report of Committee on Uniform Methods of Accounting, M. W. Mattison, Chairman.
General Discussion of Report.
"Cooperation Between Executives and Comptrollers," Prof. Roy Kester, Columbia University.
"Machine Handling of Accounts Payable," George H. Foster, Union Oil Co. of California. General Discussion.

**Group 4**—General Topic: TRANSPORTATION. (South Ball Room.)
*Railroads:*
(Program to be announced).
General Discussion.
*Automobile Trucks:*
"Handling Motor Truck Equipment" Roy F. Fike, Mid-Continent Petroleum Corporation.
"Motor Vehicle Transportation" J. F. Winchester, Standard Oil Company of New Jersey.
General Discussion.

**Afternoon**

2.00 p.m. Group Meetings:

**Group 1**—General Topic: REFINERY TECHNOLOGY. (North Ball Room.)
"Pipe Still Distillation," A. G. Peterkin, Jr. The Atlantic Refining Co.
"Recovery of Acid from Sludge," Ralph A. Halloran, Standard Oil Co. of California.
"Vacuum Distillation," Frank A. Howard, Standard Development Co.
"Some Facts Concerning Vapor Phase Cracking," Luis de Florez, consulting engineer.
"Improved Method of Treating Cracked Naptha," Ralph A. Halloran, Standard Oil Co. of California.
General Discussion.

**Group 2**—General Topic: DEVELOPMENT AND PRODUCTION ENGINEERING. (Grand Ball Room.)
"Value of Gas in the Conservation of Oil," Dr. W. P. Haseman, Marland Oil Co.
"Portland Cement for Shutting Off Water in Oil Wells," J. F. Hough, Portland Cement Association. (Illustrated with slides.)
"The advent and place of the Development and Production Engineer in the Oil Industry," A. C. Rubel, Union Oil Co. of California.
General Discussion.

**Group 3**—General Topic: OIL ACCOUNTING. (West Ball Room.)
"Realization Methods in Refining Costs," M. A. Chambers, Panhandle Refining Co.
"Gasoline Taxes in Accounting," George F. Smith, Continental Oil Co.
"I. C. C. Classification of Pipe Line Accounts " Ralph Hare, Prairie Pipe Line Co.
"Refinery Accounts," R. D. Mathews, Union Oil Co. of California.
General Discussion.

**Group 4**—General Topic: FIRE PREVENTION AND SAFETY (South Ball Room.)
"Successful Methods of Plant Protection from Fire," C. J. Cutting, The Atlantic Refining Co.
"Static—What It Is and How It Is Produced." (Speaker to be announced.)
"Fire Laws for the Oil Industry," Frank A. Epps, Tide Water Oil Co.
"Preventing Accidents in the Petroleum Industry," H. N. Blakeslee, Petroleum Section, National Safety Council.

**Evening**

8:00 p.m. Group Meetings:

**Group 1**—General Topic: REFINERY TECHNOLOGY. (North Ball Room.)
The meeting will be devoted to a general discussion of problems of refinery technology.
(*Note*—If the board of directors authorizes the creation of a Division of Refinery Technology, as recommended by the Committee on Technical Relationships, the members of the Institute present well elect the officers of the division for the year 1928 and discuss plans of activity for the division, including the organization of geographical sections.)

**Group 2**—General Topic: DEVELOPMENT AND PRODUCTION ENGINEERING. (Grand Ball Room.)
The meeting will be devoted to a general discussion of problems of development and production engineering.
(*Note*—If the board of directors authorizes the creation of a Division of Production Engineering, as recommended by the Committee on Technical Relationships, the members of the Institute present will elect the officers of the Division for the year 1928 and discuss plans of acitivity for the Division, including the organization of geographical sections.)

**Group 3**—General Topic: OIL ACCOUNTING. (West Ball Room.)
The meeting will be devoted to a general discussion of problems of oil accounting.
(*Note*—If the board of directors authorizes the creation of a Division of Oil Accounting, as recommended by the Committee on Uniform Methods of Oil Accounting, the members of the Institute present will elect the officers of the Division for the year 1928 and discuss plans of activity for the Division, including the organization of geographical sections.

### Thursday, Dec. 8

*Note*—Thursday morning and afternoon will be devoted to group sessions, arranged by general topics, at which the various subjects first will be treated in addresses and papers by selected speakers. After each speaker has finished, opportunity will be given for discussion of the subject.

**Morning**

10:30 a.m. Meeting of Board of Directors. (Private Dining Room No. 1.)
Luncheon for members of the board at noon. (Private Dining Room No. 2.)

10:00 a.m. Group Meetings:

**Group 1**—General Topic: NATURAL GASOLINE. (North Ball Room.)
(The program for this group meeting is being arranged by the Association of Natural Gasoline Manufacturers and it will be announced later.)

**Group 2**—General Topic: STANDARDIZED OIL FIELD EQUIPMENT. (Grand Ball Room.)
Condensed Reports of the following Standardization Committees:
Committee on Cable Drilling Tool Joints.
Committee on Rotary Drilling Equipment.
Committee on Oil Country Tabular Goods.
Committee on Pumping Equipment and Engines.
Committee on Steel Storage Tanks.

SPECIAL PAPERS:

"Results of Usage and Advantage of Standard A. P. I. Taper Joints for Rotary and Cable Tool Drilling," R. A. Wilson, Guiberson Corporation. (Illustrated with slides.)

"Purchasing A. P. I. Standardized Material," R. M. Ketchum, General Petroleum Corporation.

"Advantages and Results of Experiences in the Use of A. P. I. Standards on Pumping Equipment, *i.e.*, Tubing, Working Barrels and Parts, Sucker Rods, Etc.," T. E. Swigart, Shell Company of California. (Illustrated with slides.)

"A. P. I. Standard Boilers," R. G. Hamaker, Humble Oil & Refining Co.

General Discussion.

**Group 3**—General Topic: TAXATION—FEDERAL, STATE AND MUNICIPAL. (Main Dining Room.)

"Federal Taxation," A. W. Gregg, former assistant to the Secretary of the Treasury.

"State and Municipal Taxation," Frank E. Packard, Standard Oil Co. (Indiana).

General Discussion of Problems of Taxation.

**Group 4**—General Topic: CORROSION OF OIL INDUSTRY EQUIPMENT. (Grand Ball Room.)

"Corrosion in Refinery Equipment," Gustave Egloff, Universal Oil Products Co.

"Refinery Corrosion Problems," Brian Mead and Stewart Coleman, Humble Oil & Refining Co.

General Discussion of Refinery Corrosion Problems.

"Report of A. P. I. Temporary Committee on Corrosion and Digest of Answers to Questionnaire Issued by Committee," F. N. Speller, Chairman, National Tube Co.

General Discussion.

**Afternoon**

2:00 p.m. Group Meetings.

**Group 1**—General Topic: MARKETING PETROLEUM PRODUCTS. (North Ball Room.)

"What Price Free Equipment?" B. H. Anglin, Indian Refining Co.

"Credit," John D. Gill, The Atlantic Refining Co.

"Fields for Increased Consumption of Petroleum Products, Automatic House Heating, Etc.," Harry D. Frueauff, Henry L. Doherty & Co.

"Double Standards," L. V. Nicholas, Independent Oil Men of America.

General Discussion of Marketing Problems.

**Group 2**—General Topic: FUNDAMENTAL RESEARCH IN PETROLEUM. (West Ball Room.)

(*Note*—This group meeting will be devoted to a general discussion of the Institute's program of fundamental research in petroleum physics, chemistry and geology financed through funds donated by Mr. John D. Rockefeller and the Universal Oil Products Co.)

Brief talks will be made by three members of the Central Petroleum Committee of the National Research Council, to wit:

Dr. H. S. Taylor, Professor of Physical Chemistry at Princeton University, and Chairman of the Central Petroleum Committee;

Dr. Frank C. Whitmore, Professor of Chemistry at Northwestern University, and Chairman of the Division of Chemistry and Chemical Technology, National Research Council; and

E. DeGolyer, Amerada Petroleum Corporation and member Committee on Studies in Petroleum Geology of the National Research Council.

Following these talks, it is expected that those interested in this general topic will participate in a round table discussion with especial reference to co-operation between technical men of oil industry and the research follows.

**Group 3**—General Topic: REGULATION—FEDERAL, STATE AND MUNICIPAL. (South Ball Room.)

"Federal Regulations," T. K. Schumuck, The Texas Co.

"State and Municipal Regulations," W. T. Holliday, Standard Oil Co. (Ohio), and Edwin S. Hall, Standard Oil Co. (New Jersey).

General Discussion of Problems of Regulation.

**Group 4**—General Topic: CORROSION OF OIL INDUSTRY EQUIPMENT. (Grand Ball Room.)

"Corrosion of Tankers and Marine Equipment," Oliver Duke, Sun Oil Co.

"Pipe Line Corrosion," A. S. Jones, Associated Pipe Line Co.

"Reconditioning of Pipe Lines"—A motion picture film.

"Requirements of Good Protective Coatings," W. H. T. Thornhill, Wailes-Dove-Hermitson Corporation.

General Discussion Pipe Line Protection.

General Discussion of Corrosion of Oil Well Equipment.

(*Note*—The Institute's Temporary Committee on Corrosion will arrange an exhibit of protective coatings for equipment which will be shown to those interested in the subject of corrosion in one of the rooms (the number to be announced later) in the Stevens Hotel.)

**Evening**

8:00 p.m. Annual Dinner. (Grand Ball Room.) Playlet: "So's Your Oil Man," California Wildcats.

Officers of the Institute state that the railroads will sell return tickets at half fare to those attending the Institute meeting provided that each, when buying his ticket to Chicago obtains a certificate.

The National Tube Co. has issued an invitation to all members of the Institute attending the Chicago meeting to visit the company's Gary works on Friday, Dec. 9, leaving Chicago at 10.30 a.m.

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**J. A. Cuddy Joins Pocahontas**

CLEVELAND, Nov. 7.—J. A. Cuddy, who with his brother operated the Vulcan Oil Refining Co. at Coraopolis, Pa., until two years ago, has joined the Pocahontas Oil Co., Cleveland, as assistant to the president, T. E. Minshall, D. S. Campbell vice-president of Pocahontas, announced this week. The Cuddys sold the Coraopolis plant to the Freedom Oil Works Co. Pocahontas Oil Co. a few days ago opened its fiftieth service station in Cleveland. The company markets Blue Flash and Blue Flash Ethyl gasolines and Pennalene and Veedol motor oils.

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**Southern Pipe Line Co.**—Special dividend of $2 a share has been declared payable Dec. 1 to stock of record Nov. 15. Secretary V. S. Swisher announced that earnings this year exceeded expectations because of large movement of Mid-Continent crude to Atlantic seaboard. Movement has now stopped, he wrote stockholders. The $2 a share is from 1927 earnings.

## Coming Meetings

**State Executive Club, Congress Hotel, Chicago, Ill., Nov. 11, 12.**

**California Natural Gasoline Association, Biltmore Hotel, Los Angeles, Nov. 15 and 16.**

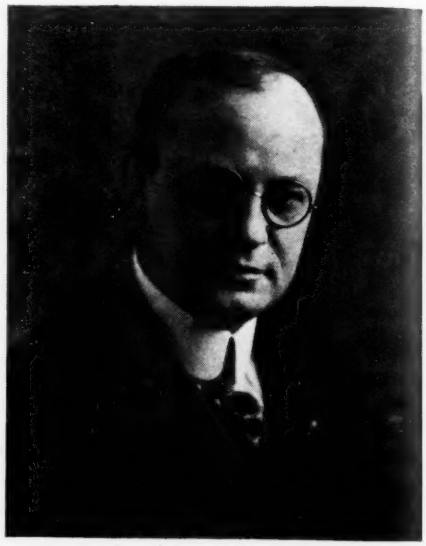
**American Petroleum Institute, Hotel Stevens, Chicago, Dec. 6, 7, 8.**

**Nebraska Independent Oil Men's Association, Hotel Fontenelle, Omaha, Neb., Dec. 14, 15.**

**Ohio Petroleum Marketers Association Spring Convention and Exhibit Exposition, Neil House, Columbus, O., Feb. 22, 23, 24.**

**American Oil Burner Association, Hotel Stevens, Chicago, April 3, 4, 5, 1928.**

# Supervises Sales For Pierce Corp.



*W. E. MAC EWEN*

ST. LOUIS, Nov. 5.—Supervision of sales through over 570 distributing stations of the Pierce Petroleum Corp. is in the hands of W. E. MacEwen, who came to St. Louis, headquarters of the company, several months ago to become general sales manager and first assistant to President E. D. Levy.

This company is carrying on a sales boosting campaign through redemption of Cashogas coupons, a trading stamp distributed by several hundred merchants in Pierce Corp. territory. These coupons are redeemable at any of the company's stations in gasoline, lubricating oil and lubricating service.

Before going to St. Louis Mr. MacEwen was vice president of the National Refining Company, Cleveland.

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**Ohio Pioneer Producer Dies**

TULSA, Nov. 6.—J. A. Lovell, well known oil producer of southeastern Ohio, died Oct. 31 at his home in Marietta, O. He was 77 years old.

Mr. Lovell was interested in production in the Mid-Continent, principally in the Nowata district, and several years ago made his headquarters at Nowata for a time. He held extensive properties near Marietta, O.

He is survived by four daughters, one being Mrs. L. B. Riddle, wife of Vice-president Riddle of the Shaffer Oil & Refining Co. Mrs. D. H. Robinson, of Nowata, is a daughter. The other two are unmarried and live in Marietta.

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**Andrews-Bradshaw Co., Pittsburgh,** Pa., will exhibit the Tracyfiers in booth 17 at the New York power show, under conditions which will resemble those found in actual boiler operation.

# Oil Sales Don't Mix With Other Retail Lines, Baltimore Census Shows

*How gasoline station in Baltimore takes advantage of restricted sites. This station of Sherwood Bros. on Howard and Cathedral streets is on a triangular piece of land jutting up against a brick building. The pumps and tanks are inside the property line, but the hose is at the curb. The grease rack is just about long enough for a car to drive upon and not be sticking out over the sidewalk*

By V. B. Guthrie
N. P. N. MANAGING EDITOR

SUSTAINED, aggressive merchandising and advertising by the established oil companies in Baltimore has tied gasoline and oil gallonage to their own stations and reduced that sold through other outlets to a low percentage.

Average sales over the year at gasoline stations in Baltimore are higher than the average per store in many other retail lines of business. In a classification of retail businesses, average sales per gasoline station ranked tenth in volume as compared with other retail lines.

Wages paid employes at gasoline stations are higher than in the majority of retail lines, excluding compensation to proprietors and firm members.

Less than 1 per cent of sales at Baltimore gasoline stations are other commodities than oil products—at least this held true in 1926.

The above points are outstanding in the census of retail distribution in Baltimore in 1926 conducted by the U. S. Bureau of Census and prepared by the domestic distribution department of the U. S. Chamber of Commerce.

They cannot be accepted too generally, however, as applying to other towns or cities because of conditions peculiar to the oil marketing business in Baltimore and also because it is hard to conform this census report, taken to embrace all retail lines, with the analysis of the oil business a man interested in that industry alone would make.

This report does offer for the first time, however, a comparison of the merchandising of petroleum products in a community with other merchandising lines in the same community, and it is of interest and value to the oil marketing industry from that point of view.

Greater value even than this will result to the oil industry from this work of the Census Bureau of the Department of Domestic Commerce because similar surveys are being made in other cities and a direct comparison of conditions in the oil marketing business in various places will thus be available.

IN A NUTSHELL, and to give the background for analysis of the figures on gasoline and oil stations, the Baltimore census covered operations of 11,127 retail establishments there in 1926. Of these 9819 were independently owned, while 1308 were units of chain store organizations, these including many gasoline stations.

Total sales through these retail outlets were $369,027,300. Sales through the independent establishments were $287,259,800 and through chain stores $81,767,500. On this basis, using the 1925 census figure of 792,296 population for Baltimore, sales per capita amounted to $436.72.

RETAIL lines of business are classified into 44 kinds, of which one is termed "gasoline and oil." The basis for the classification seems to have been the statement of the owner or manager as to the predominating class of business at his store. That is, if a man said his principal business was selling gasoline and oil, his place was put in that classification. Gasoline and oil were sold at places where another kind of business would predominate, which is taken into account in the report.

Service institutions of all kinds are omitted from consideration in this census, such as business of professional men, and this leaves out garages where the principal business is service work on cars rather than sale of parts, accessories, and so on. This should not affect to any great degree the analysis of gasoline and oil sales, since sales at such types of garages would be small.

Also, and more directly affecting

**THE accompanying article is an analysis of the census of retail distribution in Baltimore, including petroleum products, which was made by the U. S. Department of Domestic Commerce through its Census Bureau. This is the first time anything like a complete survey of the channels through which principal commodities reach consumers has been attempted. This government department has already completed collection of statistics for other cities and reports on Syracuse and Denver will be issued soon, and analysis of its figures on petroleum products carried in National Petroleum News.**

the analysis of this census of the oil marketing industry in Baltimore, distribution of both gasoline and furnace oil direct to consumers from bulk stations through tank trucks is omitted. This makes the figures on sales of oil products apply directly to business in gasoline, oil, grease and so on handled through oil company stations and dealers, and small sales of kerosene, cleaning naphtha and so on through stores.

There were 221 places classified as in the "gasoline and oil" business in Baltimore in 1926, according to this survey, and about 580 other outlets for these products, which latter class is discussed later in this article. There was a population of 792,296 in Baltimore in 1925 and 82,275 pneumatic tire motor car registrations in Baltimore as of the middle of this year, and 9927 solid tire vehicle registrations for the entire state of Maryland.

AS COMPARED with the number of gasoline stations in other places, western cities particularly, 221 places in the gasoline and oil business in Baltimore, as reported by the census, would seem low. However, this figure and the census figure as to the total number of retail outlets for gasoline and oil—800—does compare fairly closely with a census of gasoline pumps taken by the Baltimore police department on three days starting Aug. 18, 1926.

This police census showed 1450 gasoline pumps installed, and of course there was more than one pump at a great number of places. This census showed 163 drive-in stations and 307 garages selling gasoline, some of the latter of which likely considered that their predominating business and thus fell into the 221 gasoline and oil places of business shown in the federal census. The total number of locations in Baltimore where gasoline was sold was 703 on Aug. 18, 1926, according to the police census, while the federal census for the year shows 800 retail outlets for all oil products.

These figures for gasoline stations will impress most people as being low for a city of 800,000 population. Cleveland, for example, with a population of 1,100,000, and 250,000 cars registered there, has 750 service stations.

There are two reasons which may account for the relatively small number in Baltimore. One is that the city is very closely built up, space to locate stations is hard to find and zoning restriction very rigid as applied to stations on private property; and the city has license fees on storage and pumps located off private property and even a fee per foot of hose where it extends across the sidewalk, which tends to hold down curb installations.

THE ingenuity of oil companies and indivíual owners of stations in adapting their places of business to small quarters in Baltimore is most remarkable, made necessary because of conditions just outlined. This accounts for gasoline pumps being placed in niches in walls set in just enough

## CLASSIFICATION OF RETAIL BUSINESS IN BALTIMORE IN 1926.

This table includes oil products and statistics on total sales, persons employed, wages and inventory as shown in special census report of U. S. Bureau of Domestic Commerce.

| Kind of Business | Number of Establishments | Amount of Sales $ | Per cent of Total Sales | Persons Engaged and Wages | | | | Inventory† |
|---|---|---|---|---|---|---|---|---|
| | | | | Employes | Firm Members and Proprietors | Total | Salaries and Wages* | Average for Year |
| Art and Antique | 59 | 841,900 | .23 | 93 | 63 | 156 | $108,500 | $286,500 |
| Auto Accessory | 156 | 4,293,300 | 1.16 | 355 | 160 | 515 | 474,300 | 565,600 |
| Automobile | 60 | 16,810,200 | 4.56 | 897 | 55 | 952 | 1,567,800 | 1,667,500 |
| Bakeries | 300 | 5,626,700 | 1.52 | 829 | 309 | 1,138 | 1,102,000 | 267,400 |
| Boot and Shoe | 194 | 5,611,600 | 1.52 | 403 | 173 | 576 | 458,700 | 1,444,600 |
| Building Materials | 62 | 14,351,100 | 3.89 | 1,386 | 66 | 1,452 | 1,856,200 | 2,142,900 |
| Candy and Confectionery | 976 | 6,613,900 | 1.79 | 503 | 1,022 | 1,525 | 424,900 | 360,100 |
| Cigars and Tobacco | 278 | 3,610,400 | .98 | 150 | 282 | 432 | 167,400 | 427,100 |
| Clothing, Women's | 136 | 7,518,900 | 2.04 | 1,438 | 139 | 1,577 | 1,129,400 | 1,047,500 |
| Clothing and Furnishings | 358 | 9,885,700 | 2.68 | 729 | 377 | 1,106 | 1,044,800 | 2,499,400 |
| Custom Tailors | 153 | 3,806,100 | 1.03 | 402 | 174 | 576 | 603,600 | 670,800 |
| Coal, Wood and Ice | 163 | 11,980,100 | 3.25 | 1,227 | 138 | 1,365 | 1,580,000 | 783,100 |
| Dairy and Poultry Products | 105 | 13,618,200 | 3.69 | 1,358 | 119 | 1,477 | 2,189,300 | 110,500 |
| Department | 44 | 54,651,200 | 14.81 | 8,370 | 30 | 8,400 | 9,520,200 | 10,180,100 |
| Drugs | 367 | 11,059,800 | 3.00 | 1,317 | 364 | 1,681 | 1,424,300 | 1,858,300 |
| Dry Goods and Notions | 421 | 4,603,700 | 1.25 | 303 | 465 | 768 | 252,300 | 1,236,900 |
| Electrical Appliances | 57 | 4,791,400 | 1.30 | 776 | 41 | 817 | 1,232,300 | 810,900 |
| Five and Ten Cent Stores | 37 | 4,620,100 | 1.25 | 952 | 26 | 978 | 549,600 | 633,100 |
| Florists | 107 | 1,792,400 | .49 | 202 | 116 | 318 | 247,100 | 188,900 |
| Fruit and Vegetable | 662 | 4,668,200 | 1.27 | 247 | 746 | 993 | 220,800 | 115,500 |
| Fur and Fur Clothing | 20 | 1,156,700 | .31 | 107 | 22 | 129 | 139,600 | 266,300 |
| Furniture and Housefurnishings | 258 | 16,607,600 | 4.50 | 1,892 | 262 | 2,154 | 2,839,100 | 3,046,700 |
| Gasoline and Oil | 221 | 13,180,100 | 3.57 | 666 | 100 | 766 | 1,041,000 | 732,400 |
| General | 8 | 114,400 | .03 | 3 | 9 | 12 | 3,200 | 26,500 |
| Grocery & Delicatessen | 2,853 | 54,285,200 | 14.71 | 2,696 | 2,504 | 5,200 | 3,548,600 | 3,496,100 |
| Hay, Grain and Feed | 24 | 1,958,900 | .53 | 90 | 30 | 120 | 111,500 | 126,700 |
| Hardware | 261 | 8,504,800 | 2.30 | 514 | 273 | 787 | 743,000 | 1,839,300 |
| Hats and Caps, Men's and Boys' | 34 | 865,400 | .23 | 52 | 22 | 74 | 76,300 | 138,900 |
| Jewelry | 145 | 5,307,000 | 1.44 | 430 | 147 | 577 | 789,000 | 2,169,900 |
| Leather Goods | 31 | 707,800 | .19 | 65 | 33 | 98 | 78,600 | 151,200 |
| Meat, Poultry and Fish | 732 | 13,443,100 | 3.64 | 629 | 777 | 1,406 | 728,800 | 245,700 |
| Millinery | 94 | 1,108,600 | .30 | 150 | 95 | 245 | 150,100 | 74,100 |
| Motorcycles and Bicycles | 10 | 115,300 | .03 | 8 | 11 | 19 | 11,000 | 37,400 |
| Musical Instruments | 49 | 2,146,700 | .58 | 346 | 43 | 389 | 396,700 | 554,400 |
| Optical Goods | 22 | 946,000 | .26 | 128 | 19 | 147 | 236,500 | 178,700 |
| Paint, Oil, Varnish and Wallpaper | 33 | 403,100 | .11 | 42 | 37 | 79 | 48,600 | 149,400 |
| Plumbing and Heating Supplies | 53 | 2,330,100 | .63 | 336 | 52 | 388 | 570,600 | 140,900 |
| Radio | 17 | 934,500 | .25 | 85 | 15 | 100 | 111,800 | 78,600 |
| Restaurants | 706 | 12,659,800 | 3.43 | 3,573 | 733 | 4,306 | 2,761,100 | 230,200 |
| Soft Drinks and Ice Cream | 597 | 3,132,100 | .85 | 280 | 653 | 933 | 264,600 | 131,400 |
| Sporting Goods | 14 | 615,100 | .17 | 45 | 12 | 57 | 71,400 | 220,400 |
| Stationery and Magazines | 73 | 3,683,400 | 1.00 | 434 | 63 | 497 | 679,900 | 817,300 |
| Toys and Games | 11 | 110,400 | .03 | 9 | 12 | 21 | 6,200 | 25,500 |
| Typewriters and Calculating Machines | 16 | 763,400 | .21 | 158 | 11 | 169 | 252,500 | 105,500 |
| Unclassified | 150 | 33,192,900 | 8.99 | 2,446 | 150 | 2,596 | 2,058,700 | 4,472,800 |
| Total | 11,127 | $369,027,300 | 100.00 | 37,121 | 10,950 | 48,071 | $43,871,900 | $46,753,000 |

*Exclusive of compensation or earnings of Proprietors and Firm Members.
†At Cost.

to be entirely inside the property line and still not taking any ground space. They resemble wayside shrines, where the motorist may pause in reverence to the power that has removed the barrier of distance from his life.

An even greater factor in keeping down the number of stations, it is likely, is the continuous advertising and merchandising of gasoline and motor oil products by the three principal marketing companies in Baltimore, American Oil Co., Sherwood Bros. and Standard of New Jersey. These companies are consistent users of newspaper space, billboard advertising, and straight sales work to keep the public impressed with the quality of their products and service, which, with the natural condition outlined above, has made it hard for new companies to get a foothold.

For instance, out of 1450 gasoline pumps in Baltimore in August, 1926, 1248 belonged to these three companies. Out of 142 oil company owned gasoline stations this summer, 130 were owned by the same three companies. Late this summer the American Oil Co. had 137 billboards in Baltimore talking about its gasoline and oil, the Standard had 86 and Sherwood 75 and this was not a temporary condition, and did not include signs at stations. Many of these billboards are illuminated at night and are as attractive displays as any to be found. Out of a check of 1000 cars made this summer in various parts of the city, to find what gasoline their owners bought and why from 850 to 875 used continuously products of one of the three companies.

All this may seem somewhat removed from an analysis of the Baltimore census on retail distribution; but it gives a background that will make study of those figures easier.

SO, GETTING back to the census report, there were in 1926 221 places classified as selling gasoline and oil, out of 11,127 total number of retail businesses of all kinds. The total volume of sales at the gasoline stations was $13,180,100, which was 3.57 per cent of total sales of $369,027,300 at all establishments of all classifications. Department stores sold nearly 15 per cent of the total volume of sales, and groceries and delicatessen shops also nearly 15 per cent. Sales at automobile agencies were 4.56 per cent.

There were 766 persons engaged at the gasoline and oil stations, of which 666 were employes and 100 firm members and proprietors. Total wages were $1,041,000, exclusive of compensation to proprietors and firm members. For all retail business studied in Baltimore, 48,071 persons were engaged, and their compensation was $43.871,900.

The ratio of salaries and wages paid at gasoline stations to total sales was 7.90 per cent, which ranks well up among the classes of retail establishments where highly skilled salesmanship is not required. At automobile agencies, for example, the ratio of salaries and wages to sales was 9.33 per cent, at automobile accessory places 11.05 per cent. Grocery stores rate 6.54 per cent, optical goods, for example 25 per cent. The average ratio of salaries and wages to sales at all retail establishments was 11.89 per cent.

Oil and gasoline stations carried $732,400 average inventory for the year, or 5 per cent of their total sales of $13,180,100, as compared with over 12 per cent of total sales carried in inventory for all 44 retail lines of business classified. In other words the oil station turned its stock over about 20 times during the year, and this would seem low for the actual physical turnover under conditions under which the oil company service station carries small gasoline storage replenished daily or oftener if necessary. Turnover on lubricating oils and greases would be much slower, of course. Inventories at grocery and delicatessen stores are about 6 per cent of yearly sales, at automobile agencies 11 per cent.

Average sales per establishment at oil and gasoline stations in Baltimore in 1926 were $59,640, making this class of merchandise establishment tenth in the list of kinds of business rated on this basis. (See Table No. 1.) On the basis of one quart of oil to 20 gallons of gasoline, and assuming that the total business at the average station is gasoline and oil exclusively, this would mean gasoline sales at each station of 251,813 gallons, or about 700 gallons a day, based on the average service station price of 22.7 for a standard grade of gasoline during 1926 at Baltimore. A good share of the gallonage in Baltimore is high test gasoline, which would tend to reduce this figure for volume of gasoline sold at the average station somewhat. On the same basis, the station would sell 120,000 quarts of oil per year average, at 25 cents a quart or about 330 quarts a day.

EACH individual in Baltimore on the basis of 1925 census figures, in 1926 bought $456.72 worth of commodities from establishments in these 44 classifications of retail business. Only two kinds of stores reported per capita sales of more than $50, department stores leading with $68.34, and grocery and delicatessen stores next with $67.18. Gasoline oil stations stood eighth in the list rated on per capita sales of $16.31. (See table No. 2.)

A better basis to break up gasoline and oil sales would be to apportion the average from total sales of $13,180,100 to the individual car owner. On the basis of 82,275 registrations this summer, per car sales would be around $160, which might run an average of $8 during the year for lubricating oil and $152 for gasoline, around 670 gallons at an average of 22.7 cents per gallon. This would not take into account sales to tourists. Of local cars there would be 372 cars for each gasoline station.

The factor of individual ownership of gasoline stations comes out in the analysis of labor at stations. Of the total number of 666 persons in service at 221 gasoline stations, outside of proprietors and firm owners, the census figures show only 206, or 31 per cent, engaged in selling. This is less than one to each station and is due to the fact that the report does not include proprietors or firm members. Practically all this latter class enumerated at 100, at gasoline stations should be placed in the selling

## Table No. 1

Average Sales Per Establishment for Various Kinds of Retail Business in Baltimore in 1926:

| | |
|---|---|
| Department Stores | $1,255,005 |
| Automobile Agencies | 280,433 |
| Building Materials | 231,582 |
| Dairy and Poultry Products | 130,058 |
| Five and Ten-Cent Stores | 125,986 |
| Electrical Supplies | 84,060 |
| Hay, Grain and Feed | 82,546 |
| Coal, Wood and Ice | 78,347 |
| Housefurnishings | 64,662 |
| Gasoline and Oil | 59,640 |
| Average for all 44 kinds of retail business classified | $ 33,165 |

## Table No. 2

Sales Per Capita to the Kind of Retail Business in Baltimore in 1926:

| | |
|---|---|
| Department Stores | $68.34 |
| Grocery and Delicatessen | 67.18 |
| Automobile Agencies | 20.82 |
| Housefurnishings | 20.65 |
| Building Materials | 17.77 |
| Dairy and Poultry Products | 16.90 |
| Meat, Poultry and Fish | 16.64 |
| Gasoline and Oil | 16.31 |
| Sales Per capita for 44 Kinds of Business classified | $456.72 |

## Table No. 3

Average Salaries and Wages Per Employe for Various Classes of Retail Trade in Baltimore in 1926. Compensation to Owners Not Included:

| | |
|---|---|
| Optical Goods | $1848 |
| Jewelry | 1835 |
| Automobile Agencies | 1748 |
| Dairy & Poultry Products | 1612 |
| Typewriters & Calculating Machines | 1598 |
| Electrical Supplies | 1588 |
| Sporting Goods | 1587 |
| Stationery, Books | 1567 |
| Gasoline and Oil | 1563 |
| General average for 44 kinds of retail business | $1182 |

division. Even then it would be hard to reconcile the 460 figure the census report shows as non-selling employes at the 221 stations. This report would show one employe engaged in selling and two at each station non-selling. It seems likely that the census report arbitrarily classified the owner or employe in charge of the station as selling and the rest as non-selling.

SALARIES or wages paid to service station men in Baltimore rank well up with the average paid by higher class retailing establishments, generally, and it should be kept in mind in this connection also that the figure given here does not include compensation to owners. The average per employe for 1926 was $1563, or $130 a month. This rates the gasoline station ninth among the 44 classes of retail business. The average for all classes is only $1182. (See Table No. 3.)

An important fact brought out in this study of retailing of gasoline and oil in Baltimore is the very low proportion of sales made through other outlets. The census report gives a total of 800 outlets in the city in 1926.

Total sales through these 800 outlets were $13,444,600, while the 221 gasoline stations sold $13,075,400 of this. Less than 3 per cent of sales were outside of what were known to the public as gasoline stations. As pointed out earlier, garages are omitted except where they reported their principal business the sale of gasoline and oil, when they likely are classed as gasoline stations. Groceries and delicatessen stores to the number of 474 report sales of oil products, but their total sales of $4700 are so small

## Table No. 4

Retail Outlets for Gasoline and Oil in Baltimore in 1926 and Volume of Sales Where Possible to Ascertain:

| Outlet | Number | Volume in $ |
|---|---|---|
| Auto Accessories | 31 | $ 121,400 |
| Auto Sales Agencies | 21 | 208,300 |
| Bakeries | 2 | ..... |
| Candy & Confectionery | 5 | 2,500 |
| Coal, Wood & Ice | 2 | 18,600 |
| Dairy & Poultry Products | 1 | ..... |
| Drugs | 1 | 800 |
| Dry Goods & Notions | 1 | 100 |
| Florists | 1 | ..... |
| Fruit & Vegetables | 1 | 3,000 |
| Furniture | 1 | ..... |
| Gasoline & Oil | 221 | 13,075,400 |
| General | 1 | ..... |
| Groceries & Delicatessen | 474 | 4,700 |
| Hardware | 17 | 4,300 |
| Meat Markets | 15 | 2,300 |
| Motorcycles & Bicycles | 2 | 2,600 |
| Paint & Wallpaper | 2 | 100 |
| Soft Drinks | 1 | ..... |
| Total Outlets | 800 | $13,444,600 |

it is likely this is mostly trade in kerosene, or at least some other product than gasoline sold through pumps. (See Table No. 4.)

## Table No. 5

Sales of Commodities Other than Oil Products at Gasoline Stations in Baltimore in 1926:

| | |
|---|---|
| Motor Vehicles | $ 4,000 |
| Auto Accessories | 96,400 |
| Candy & Confectionery | 200 |
| Smoking Supplies | 1,400 |
| Coal and Wood | 700 |
| Electrical Supplies | 500 |
| Ice Cream & Soft Drinks | 200 |
| Radio Sets & Supplies | 300 |
| Stoves—Coal, Gas & Electric | 500 |
| Total | $ 104,200 |
| Sales of Oil Products | $13,075,400 |

Another interesting point brought out in this survey is the extremely small volume of sales of other commodities than oil products at gasoline and oil stations in Baltimore. In fact, total sales of all other commodities were less than 1 per cent, auto accessories being the largest single classification. (See Table No. 5.)

## New Sinclair-Fall Trial Set for Jan. 17

WASHINGTON, Nov. 7.—Jan. 17, 1928, has been set as the date on which Harry F. Sinclair and Albert B. Fall will go on trial again for alleged conspiracy to defraud the United States government in the leasing of Teapot Dome naval oil reserve to Sinclair. The trial which began three weeks ago, came to an abrupt end last week when Justice Frederick L. Siddons, who was sitting in the case, declared a mistrial following presentation of affidavits that Harry Mason Day, an officer of the Sinclair Exploration Co., had hired Burns detectives to "shadow" 11 of the 12 jurors.

Day was arrested Friday on a charge that he had attempted to "fix" the Sinclair-Fall jury and released under $25,000 bond. He had refused to answer questions asked by the District of Columbia grand jury on the grounds that his answers would incriminate him. A warrant was issued for Sinclair but withdrawn before it was served.

Government prosecutors filed a motion Friday with Justice Siddons, asking him to cite H. M. Blackmer, former chairman of the Midwest Refining Co., and material witness in the Sinclair-Fall case, for contempt of court for failing to appear after a subpoena had been served on him in France, and to seize $100,000 of Blackmer's property in this country under the Walsh act. Nathan L. Miller, former governor of New York, who represents Blackmer, contends the Walsh act is unconstitutional and will fight seizure on that ground if seizure is attempted.

## Contagion of Price War In Indiana Shown

WEST BADEN, Ind., Nov. 7.—"A streak of fat and a streak of lean," might have been a good subject for the talk delivered to the oil men at the West Baden convention by Sam Hurd on Thursday afternoon. He spoke words of encouragement and words of warning with special application to the oil jobbers of Indiana, whom he serves as secretary. "Indiana is not in as bad shape as it is reputed to be," Mr. Hurd said, "but it might get worse instead of better."

He presented his subject first with a big map of the state, tinted in varying shades of blue to show abnormal gasoline price conditions, their locations and degree of intensity. The map showed first that half the state or more remains untouched by price war, and Mr. Hurd estimates that nearly half the state's gallonage is selling at the normal price; the price wars are in the bigger towns.

As an horrible example, Mr. Hurd told about the road to Richmond, Ind., from Indianapolis, 70 miles. "There is a low-price station in Richmond," he said, "and more than one in Indianapolis, but none of these stations sell a drop of gasoline off of his own lot. None of them has a tank truck or a re-selling customer. But the jobbers in Indianapolis and in Richmond have met the prices and they have carried those reduced prices to the ends of their longest tank wagon routes, so that the Indianapolis-Richmond road is a 70-mile stretch of low price pumps."

With reference to multiplying competition, Mr. Hurd pointed out that there are fewer than 200 Independent oil jobbers in Indiana, of whom about 85 handle less than 20,000 gallons of gasoline a month. "That situation is not bad where normal prices prevail and the small Independent is able to lay up a reserve for emergencies," he said. "With profits on oil and grease, an Independent can get along on less than 20,000 gallons a month if he drives a tank truck himself and his wife keeps the books, but price war conditions will be almost disastrous to a new company of this kind."

Finally, Mr. Hurd told the jobbers that Indiana had joined Illinois in demanding that all storage tanks in the state be surrounded by dykes, sufficiently capacious to hold 150 per cent of the capacity of the tanks themselves. "In congested neighborhoods," he says, "the fire marshal is demanding concrete walls, 36 inches thick at the base and 18 inches at the top. Such an installation for a very small plant will cost close to $5,000," Mr. Hurd says.

# 5000-Barrel Well East of Burbank Field May Open New Light Oil Pool

By Lawrence E. Smith

N. P. N. STAFF WRITER

**TULSA, Nov. 8.—The Osage Agency at Pawhuska announces change in the date of the next Osage sale from Dec. 6 to Dec. 12. The change has been made because the former date would conflict with the American Petroleum Institute meeting in Chicago.**

AT THE end of the week the well of A. G. Oliphant and associates, on the east side of the Burbank field and past the dry hole belt that appeared to limit the field, was still making 155 barrels per hour. Thereby is appended a story.

Mr. Oliphant, in drilling this well, whose maximum production was around 200 barrels per hour, has helped materially in answering the great question that was furrowing federal official brows, to-wit, where can we get some money for the Osage Indians. Their fortunes have ebbed during the oil industry depression, until it is reported that many of them are living in want.

Several are reported as having to use last year's car and it is even hinted darkly—they are a proud people and do not advertise their woes—that Christmas, 1927, promised to be a dull affair, with presents of the cheaper variety, such as $500 radio sets, about all that the children could expect.

Things have brightened, though. There will be a sale of Osage acreage Dec. 12, there are two quarter section tracts offsetting the Oliphant lease yet unsold, besides acreage adjoining other extensions of the past year, and altogether things have picked up.

Mr. Oliphant came to Tulsa several years ago and was employed in the engineering and geological departments of the Cosden Co. and the Carter Oil Co. He served in the army and, on his return to Tulsa, decided to see what there is to the business of being an independent operator. He began to play the Osage country and became known as one of the most consistent of buyers of low-priced acreage. Some of it yielded small production, other tracts were barren. All told, he has bought more than 50 quarter section tracts in the past seven years.

At the March, 1926, sale of Osage acreage, he and C. B. Peters paid $8,000 for the northwest quarter of 20-27-6, then considerably outside the Burbank limits. Oliphant and Peters were 50-50 partners in the purchase. Subsequently, Messrs. Millard, Voyles and Stanley, of Pawhuska, bought the Peters half interest, giving each of the three a one-sixth interest. Still later, Mr. Oliphant bought the Millard interest, giving him the two-thirds working interest. Thus it stands at this time.

Two wells were drilled on the lease before the big production was started. No. 1, in the southwest corner of the lease, offsetting a Phillips Petroleum Co. well, was a 40-barrel well and is now pumping about 30 barrels. No. 2, in the northwest corner, was dry. No. 3, the big one, is in the northeast corner.

There was a frenzied time around this well when it came in. The tankage consisted of a flow tank and two 250-barrel tanks. Prairie Pipe Line Co. hastily connected and is taking the full production.

The new producer is not accounted

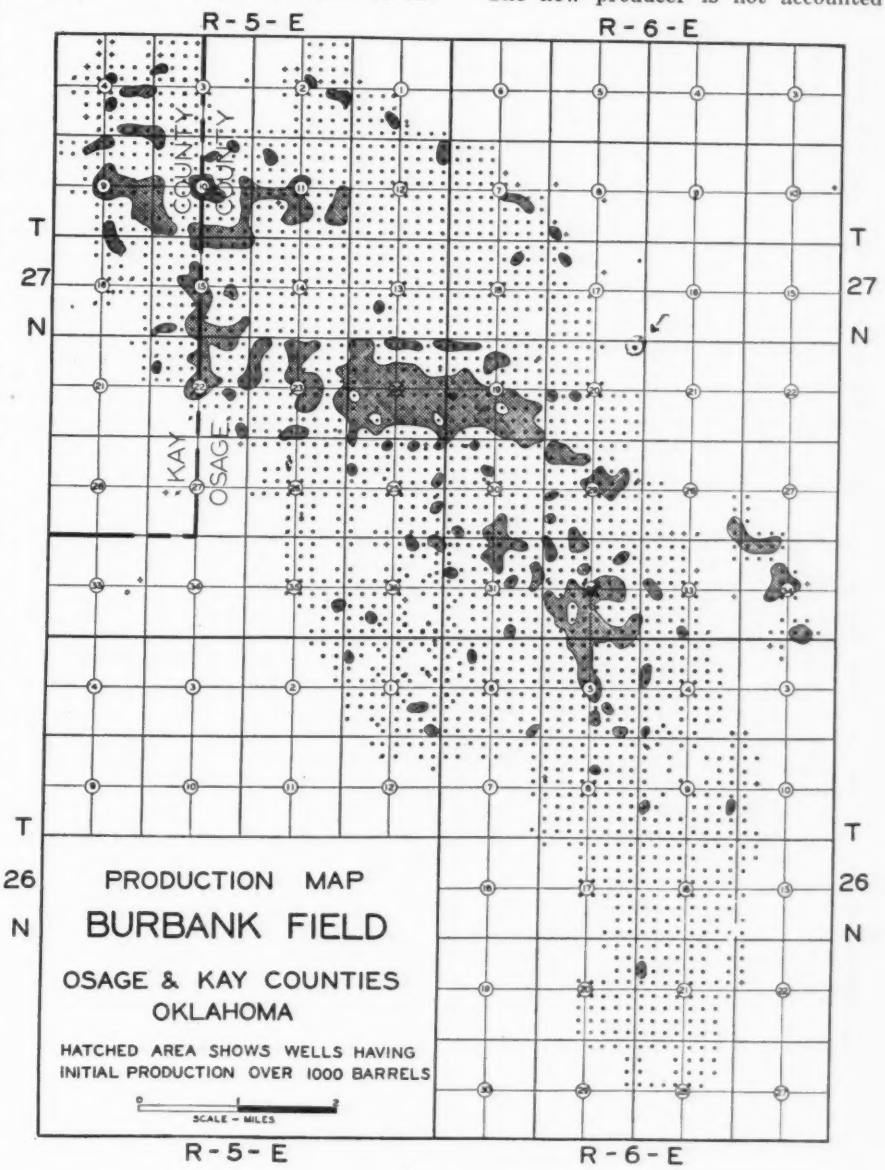


FIG. 3

*Map of the Burbank field, from October issue of the Bulletin of the American Association of Petroleum Geologists, by J. Melville Sands. Location of the new Oliphant well marked with circle*

for by higher structural condition. It found the Burbank sand at 2897-2900 feet, which is normal for the area. Structure, it is believed, has only minor influence in the oil accumulation of the Burbank field. In the October number of the Bulletin of the American Association of Petroleum Geologists, J. M. Sands, consulting geologist to the Phillips Petroleum Co., says:

"ANOTHER peculiar feature of this field is that besides the irregularly spaced and shaped porous portions of the producing sand scattered throughout the field, there is a very porous and productive zone strung along the northeastern extremity of the field. This zone is not more than a quarter of a mile wide and grades in a very short distance into the impervious shale which limits the area of the field in that direction. The writer is not conversant enough with all the theories of deposition, sedimentation and cementation of rocks to be sure of the cause of this porosity, but believed that it is probably caused by the leaching out of the calcareous cementing material after depcsition by a current of water directed in this course by the impervious nature of the rock to the northeast, and that after this leaching the pore space was filled with oil."

It is this porous zone that has been found by the Oliphant well, by the Kewanee Oil & Gas Co. in its 34-27-6 extension and by George Parker in 11-26-6. Dry holes intervene between all three pools and the main Burbank field.

The topic of speculative interest is the probable width of this new zone. There probably will be some fair money paid at the Dec. 6 sale for the privilege of finding this out. The southwest quarter of Sec. 16 and the northwest quarter of Sec. 21, of 27N-6E, are both unsold and it is expected they will be on the list when the Osage agency releases it. There are several quarter sections around the Kewanee and George Parker extensions that have not been leased. Interest in these runs high and the coming sales should be well attended.

Oliphant and associates are starting two more wells on the tract, one to be a location west and the other a location south of the big well. Phillips Petroleum Co. will drill the north offset at once.

There should also be some interest in the northeast quarter of 28-27-6. The Gypsy Oil Co. has the tract to the south and a recent completion is the No. 7, being the third location from the east along the north line. It made 100 barrels per hour initial and is now making about half that much. The town of Shidler is on this tract.

*A. G. OLIPHANT*

## Dr. Thompson. New Jersey Standard Physician, Dies

NEW YORK, Nov. 7.—Dr. W. Gilman Thompson, medical consultant of the Standard Oil Co. (New Jersey) for the past nine years, died suddenly on Oct. 27 of a heart attack at the age of nearly 71.

Dr. Thompson specialized in industrial diseases.

He also served as a consultant in industrial hygiene for the United States Health Service, investigating conditions among workmen engaged in the manufacture of explosives.

He was educated at Yale and at the College of Physicians and Surgeons at Columbia university. He trained at Kings County hospital, London, and at the Berlin University Medical school.

Dr. Thompson each Wednesday lunched at the company dining room and in the afternoon attended a clinic of cases brought in from various departments.

He married Miss Harriet Howard Pomeroy in 1887 who died in May, 1926. They had no children.

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**S. O. New York to Broadcast**

NEW YORK, Nov. 5.—Standard Oil Co. of New York began broadcasting Nov. 2 and will continue each Wednesday evening from New York and New England stations. A half hour's program from 7:30 to 8 will be given by popular entertainers and short talks on historic and scenic attractions of New York and New England will be given to stimulate interest in touring. Stations in the Standard of New York chain are: WEAF, New York; WTIC, Hartford, Conn.; WGY, Schenectady, N. Y.; WGR, Buffalo; WTAG, Worcester, Mass.; WEEI, Boston; WJAR, Providence, and WCSH, Portland, Me.

## Transiting by Foreign Tankers Attacked

WASHINGTON, Nov. 5.—When foreign flag oil tankers that have carried petroleum or its products from Los Angeles to New Orleans, there unload their cargoes, and then picked up their cargoes again to carry them on to Liverpool, put into Los Angeles or New Orleans, the collector of customs may seize them. They will be accused of violating Sec. 27 of the Shipping Act. That section reserves to American flag ships the commerce between American ports.

Last April Attorney General Sargent ruled that an Anglo-American tanker that had carried petroleum from San Pedro to New Orleans, where it was subjected to a further refining process, and the product finally carried on to Liverpool had not violated that part of the law. He has withdrawn that opinion, so as to enable the courts to pass on the subject.

The British tanker had been libelled, at the instigation of D. B. Carson, commissioner of navigation in the Department of Commerce, on the ground that it had violated the statute mentioned. The penalty is confiscation of the ship and the cargo.

Collectors of customs at San Pedro and New Orleans have been instructed to seize any ship that has engaged in what, in railroad parlance, would be called transiting of goods for manufacture or processing, on the through rate from original point of origin to ultimate destination, plus a charge for stoppage in transit. The question will be presented to the courts. As long as Attorney General Sargent's opinion was before the commissioner of navigation that official could not make a test case for the courts, all officials in the executive branch of the government being bound by the opinions of the attorney general.

The American Steamship Owners Association and the United States Shipping Board desire to break up transiting of oil at New Orleans by foreign ships. They desire, if possible, to make it impossible for a foreign ship to take any product at any American port, carry it to another, there have it manufactured and the product carried to a foreign port. They desire, if anything of that sort is done, to reserve the haul between American ports to American ships.

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J. T. McClelland, past president of the Purchasing Agents Association of Houston and vice president of the National Association of Purchasing Agents, has resigned his post with the Sinclair Oil & Gas Co., to become manager at Houston of the George E. Woods Insurance Agency, representing the Indianapolis Life Insurance Co. He is widely and favorably known in south Texas oil circles.

# High Compression Engines and Fuels Overplayed, Expert Says

WEST BADEN, Ind., Nov. 3

WITHIN a few years it is likely automobile manufacturers will be selling cars on the argument of good general performance, rather than high compression features, and the oil industry will be selling gasoline on the same argument of good general performance, rather than over-emphasizing its anti-knock value.

Dr. G. G. Brown, professor of chemical engineering at the University of Michigan, in charge of the research program of the Natural Gasoline Association, told oil men this in his talk Nov. 3 before the American Oil Men's Association, in convention here. He was speaking on the subject "The Gasoline of Tomorrow."

The present advertising of some makes of motor cars and some companies selling Ethyl gasoline has given the public an altogether exaggerated idea of the importance of high compression in automobile engines, Dr. Brown said. He said that, when the public began to realize the greater care that must be given the high speed, high compression engines to keep them performing satisfactorily, and also when the public began to realize that fuel economy was not so appreciable in high compression cars as it had been told, it might begin to consider other features in engine design and operation more important. He said he doubted if there was an appreciable permanent gain in compression beyond a 6-1 ratio, due to faster wear, leakage past piston rings and an accompanying drop in compression.

He distinctly rated anti-knock value as one standard for a motor fuel, others equally important being easy starting, acceleration, power, and fuel economy. He said, however, there were makes of cars being turned out today that would never need an anti-knock fuel, and also that perhaps the public has been educated to be too squeamish about engine knocking. He said all his tests, run in connection with his research work in natural gasoline, showed that the engine developed its maximum power after knocking became audible. He stated, however, that bad knocking was undoubtedly harmful to the engine.

As high compression ratios as are now being given engines, and even higher, are not new to either the oil industry or the automobile industry, said Dr. Brown, taking his audience back through various periods of motor fuel manufacture to show the close relationship between motor fuel standards and engine design.

"In 1915 Hudson cars had the same compression ratio as today, as also did the Cadillac," he said. A 1915 Cadillac could not be driven in 1920, except with the spark greatly retarded or some mechanical change made to give more room in the head and lower the compression.

"During this period of 1914-15 the oil industry was making a straight gasoline of about 390 end point, with poor fractionating equipment, as it was not necessary to cut very deeply into the crude. The cars of that period ran successfully on this gasoline and there was no great discussion of anti-knock requirements."

In 1915, with the war, came the necessity of cutting deeper into the crude to secure gasoline for domestic purposes, the cream going for war use. In 1918 and 1919, said Dr. Brown, kerosene was blended with natural gasoline and sold as motor fuels. Engines designed in 1914 and 1915 had to run on these fuels and the compression ratios had to be decreased, and manifolds had to be heated to vaporize the fuel satisfactorily in the cars made starting with 1918.

THEN came the recognition that cars would not operate satisfactorily on this heavy fuel and cracking was introduced to give a greater supply of a reasonably volatil fuel from the same amount of crude. Motor fuel produced by cracking was of fair volatility and better anti-knock than the former motor fuels produced by straight distillation.

From 1920 to 1925, due to changes in engine design again towards higher compression ratios, demand has been more insistent on the oil industry to increase the volatility and anti-knock value of its motor fuel gasoline. The oil industry has responded nobly as regards the volatility feature and gasolines being sold today are better than government specifications as regards end point.

"The industry is in a period of transition now, from using end point as the basis for judging the performance of a gasoline, to adoption of a true volatility test and an anti-knock test as the standards best suited to be a guide to actual performance," Dr. Brown said. "Undue emphasis has been placed on anti-knock rating because of the violent advertising of high-compression cars and high-compression fuel. The public is told to look only at high compression and forget about general performance.

"Volatility and anti-knock rating must be discussed together. What advantage is it to a man to use a high anti-knock gasoline if he cannot start his car? Effective volatility means that the car will start without trouble; that before it is well warmed up it can be driven without excessive use of the choke; that it will give smooth and uniform acceleration even when partially warmed up. Most engines driven in the winter time never get really warmed up."

EFFECTIVE volatility cannot be gained through the use of a fuel with such a low end point that it will tend to vaporize in the carburetor, leading to gas lock, Dr. Brown said, particularly with cars with heated manifolds and heated carburetors. In referring to the use of natural gasoline blended with straight gasoline in producing motor fuels to meet present day requirements, Dr. Brown said that natural gasoline was being produced today with such low vapor pressure that it could be shipped in an ordinary tank car and blended with gasoline in any quantity desirable without danger of gassing in the carburetor.

Dr. Brown said that he drove from Ann Arbor, Mich., to West Baden in a Lincoln car using only this natural gasoline for fuel. He said he averaged 52 miles an hour on at least part of the trip and that he secured 10.7 miles per gallon on this straight natural gasoline fuel. He said the temperature in the carburetor in the Lincoln V-type motor reaches 200 Fahr. This fuel has an initial of 95 F., 20 per cent over at 120, 50 per cent at 150, 80 per cent at 200, 90 per cent at 250 and an end point of 350, with a benzol equivalent of 44 to 47. About 40 per cent benzol equivalent is regarded as standard for anti-knock rating.

Dr. Brown and his associates brought down by truck from Ann Arbor their regular laboratory equipment for running tests on samples of gasoline to determine their anti-knock value. Tests were run on a special single-cylinder motor of 7-1 compression, with a specially designed distributor; and also on a standard Chevrolet motor, running both with the motor hot and also cold. In answer to questions following his talk, Dr. Brown said that of 11 samples of gasoline tested at the West Baden meeting 4 showed as good anti-knock rating as Ethyl gasoline, two and possibly a third being fuels in commercial use.

Dr. Gustav Egloff, of Universal Oil Products Co., Chicago, was on the same program with Dr. Brown to talk on the gasoline of tomorrow. Dr. Egloff sent word he was on the witness stand in the hearing at St. Louis in the suit for violation of cracking patent rights brought by his company against the Standard Oil Co. of Indiana and unable to get away.

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WEST BADEN, Ind., Nov. 7.—"Enthusiasm is, to the channels of trade, what the blow torch is to a frozen pipe," said H. L. Fogleman in an address to the American Oil Men's Association in the West Baden Springs Hotel last Thursday afternoon. "Pass along your enthusiasm to your frozen filling station men and tank wagon drivers. They can sell your gasoline and oil and grease, in greater quantity and for more money if they are warmed up." "Salesmanship vs. Price-Cutting," was the subject assigned Mr. Fogleman.

Dividing sales ability into its component parts, Mr. Fogleman charted an algebraic quantity of "quality plus quantity plus manner, or conduct of the transaction." But for purposes of this talk he took quantity and quality for granted, assuming that any normal business man wishes to deliver good merchandise in full measure. He spoke wholly of the manner of carrying on a sales program.

As a primary requirement he suggested that oil salesmen, whether of the white collar variety, tank truck driver or service station attendant, must be in good health, for without a vigorous body the mind is poorly equipped. He pointed out that they need to be trained to do their work like the boss would like to have it done, and the employer himself is the best man to teach them.

He added, that the salesmen have to have their faith renewed occasionally, they have to be re-sold on the high merit of their products, the integrity of their management and the strength of their organization. Salesmen need to be given an occasional glimpse of the future good salesmanship offers to them. "Give the boys a little banquet once in a while," he said. "Make them believe in you and your goods. But they will not do it unless you first believe in yourself and your goods."

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**Leader Iron Works, Decatur, Ill.,** manufacturer of oil equipment, has just published bulletin 505 devoted to its line of truck tanks. Construction features of its model 509 truck tanks for the oil industry, including illustrations, dimensions and other pertinent information, are given. Extra equipment that can be furnished with this model include barrel carrier, emergency valves, capacity indicator, hose carrier, manholes, fenders and tail light and license bracket.

# Entertainment Was Big Feature At A. O. M. A. Convention

WEST BADEN, Ind., Nov. 4.—Ed Schlee, head of the Wayco Oil Co. of Detroit, commander of the "Pride of Detroit" on its recent round-the-world effort, largest distributor of Shell gasoline and Valvolene motor oil, was the banquet speaker at the recent convention of American Oil Men's Association here. His description of the hazards and hardships of his journey was spiced with funny tales of Old World customs, policies and politics. Nobody received a greater ovation or warmer welcome from the oil men than their flying friend Schlee.

Everyone who heard him carried away mental pictures of half-naked black natives fleeing to their huts in the unchartered central of India, scared by the "Pride of Detroit," flying low; of sand storms in China five or six thousand feet high; of sleet over the Atlantic, of sleepless nights and waterless days contrasted by occasional banquets and balls when they managed to meet a metropolis where they were expected.

Aviation had quite a part in the activities of the convention. Mr. Schlee did not fly from Detroit as he planned but Eddie Stinson did land in West Baden for the meeting in the plane he is touring the continent for Veedol. John P. Wood of Wausau, Wis., was also in West Baden by air. Between them the aviators took some 75 men of the convention for the first flight, which added much to the thrills of the occasion. Mr. Stinson talked at the banquet after Mr. Schlee. The evening's program was concluded by Max Malini, famous magician.

Registration at the meeting exceeded 450 by a few on the last day. Of this number about 110 were jobbers, exclusive of carload marketers and distributing refiners. More than half of those present motored to the meeting, coming from as far east as Columbus, O., and as far west as St. Louis. The majority of the Chicago delegation came by motor.

The busiest group of men at the hearing was Dr. G. G. Brown of the University of Michigan and his two assistants who came under the auspices of the Association of Natural Gasoline Manufacturers, bringing elaborate apparatus to test samples of gasoline brought to them by the oil men. Dr. Brown's laboratory opened in a tent outside the hotel at 7 o'clock a. m. and closed at 9 p. m., for two days. They tested 36 samples of motor fuel. Detailed reports of each will be mailed by Dr. Brown to the oil man who brought the sample.

The equipment exhibit at this meeting surpassed anything of the kind ever held in this part of the country. Several refiners made elaborate exhibits of their products. A great deal of new and improved equipment was on display for the first time in the spacious lobby of the West Baden Springs hotel.

For the first time in the history of oil associations, a full sized filling station was on exhibition. This exhibit was built by the Union Metal Manufacturing Co., a complete steel building, flooded with spot lights, in the middle of the 100-foot circular floor. Around it, on the same floor were all the other exhibits. Above them in cylindrical setting were six floors of hotel room with balconies looking down on the brightly lighted composite of oil equipment. The dance every evening was held inside the double circle of booths. The metal filling station that comprised the central figure was equipped with complete toilet rooms, a display by the Crane Co. of Chicago. It was a partnership exhibit. The following companies exhibited at the meeting:

**List of Exhibitors**

Amco Sales Corporation, Chicago, Ill.
American Finance & Mfg. Co., Chicago, Ill.
American Garage Equipment Co., Columbus, Ohio
American Can Company, Chicago Ill.
Air Scale Company, The, Toledo, Ohio
Auto Compressor Company, Wilmington, Ohio
Bennett Pumps Corporation, Muskegon, Mich.
Boyce-ite Products, Inc., Cincinnati, Ohio
S. F. Bowser & Co., Inc., Fort Wayne, Ind.
Henry Barroll, Chicago, Ill.
Crane Company, Chicago, Ill.
Champion Pneumatic Machinery Co., Chicago, Ill.
Cosden Sales Corporation, Chicago, Ill.
Diebold Safe & Lock Company, Canton, Ohio
Dayton Pump & Mfg. Co., Dayton, Ohio
Dover Stamping & Mfg. Co., Cambridge, Mass.
Erie Meter Systems, Inc., Erie, Pa.
Fry-Marvel Pumps, Rochester, Pa.
Globe Mfg. Co., Battle Creek, Mich.
H. M. Gousha Company, The, Chicago, Ill.
Gibson Company, The, Indianapolis, Ind.
Graver Corporation, East Chicago, Ind.
Handy Oiler Company, Danville, Ind.
Macbeth Evans Glass Co., Charleroi, Pa.
Murdock Pump Company, Indianapolis, Ind.
Merit Oil Equipment Co., Cleveland, Ohio
Morrison Bros., Dubuque, Iowa
McSavaney Company, The, Springfield, Ohio
McDonald Mfg. Co., A. Y., Dubuque, Iowa
Master Mfg. Co., Litchfield, Ill.
National Steel Barrel Co., Cleveland, Ohio
National Brake & Electric Co., Milwaukee, Wis.
National Recording Pump Co., Dayton, Ohio
Oil Products Appliance Co., Maywood, Ill.
Pennsylvania Flexible Metallic Tubing Co., Philadelphia, Pa.
Petroleum Marketer, Houston, Texas
Quaker City Iron Works, Philadelphia, Pa.
Quincy Compressor Co., Quincy, Ill.
Roxana Petroleum Corp., St. Louis, Mo.
Jay B. Rhodes Company, Kalamazoo, Mich.
Shotwell Pump Company, Indianapolis, Ind.
Sun Oil Company, Chicago, Ill.
Sharpsville Boiler Works Co., Sharpsville, Pa.
St. Louis Pump & Equipment Co., St. Louis, Mo.
Stewart Bros. Paint Co., Alliance, Ohio
Steinke Bros. Mfg. Co., Peoria, Ill.
The Texas Company, Chicago, Ill.
Tidewater Oil Sales Corp., Chicago, Ill.
Union Metal Mfg. Co., Canton, Ohio
Vacuum Oil Company, Chicago, Ill.
Williams Sealing Corp., Decatur, Ill.

# Yates Field Potential 313,301 Bbls. Daily, Prorating Tests Show

By Paul Wagner
N. P. N. STAFF WRITER

HOUSTON, Nov. 3

RATED potential production, under which yardstick crude oil runs are being shared by Yates field operators, stood at 313,301 barrels daily Nov. 1. Figures on potential were based on new 1-hour open flow tests by wells and leases, as made by the Pecos County prorating committee.

On the basis of this rated potential the present marketed production of 37,000 barrels moving out of Yates field daily represents about 11.8 per cent of the field's potential. Actually, a measurable decline from such a total might be expected in a few days at the most were all wells in the field to be pulled on simultaneously at their open flow capacities. It is, however, a yardstick for prorating purposes, and the committee has followed the same method of establishing the field's production since the prorating plan originally took effect Oct. 1, last.

On the basis of 40 wells actually producing at the beginning of the second month of the prorating period, their average potential stood at 7,832 barrels daily, based on 1-hour guages. A month earlier, 23 wells had average potential production based on 1-hour guages of 7,515 barrels daily.

No such staying qualities would be possible for wells producing from a lime pay horizon, where a hydrostatic water head mainly provides the type of pressure behind the Yates field oil. Yates field is undoubtedly the world's greatest shallow development to date—at 1000-1350 feet—and requires no exaggeration for that to be recognized.

LEADERS of NATIONAL PETROLEUM NEWS are familiar with the policy of Yates field operators of not building storage for their crude but, in turn, limiting their production individually to the quantities marketable through pipeline channels.

Until Oct. 28, last, when first runs were made by Illinois Pipeline Co., through its Yates field—to—Del Rio system, the market outlet consisted of the 30,000 barrels daily allocated to Pecos county by Humble Oil & Refining Co. The second month of proration began with the Illinois pipeline handling 7,000 barrels daily, giving the field a market for 37,000 barrels. This is to be quickly brought up to 43,000 barrels by the Illinois handling 13,000 barrels daily.

Marketable production quotas, by companies, based on quantities of potential yield by leases, as reached by using the yardstick herein discussed, were as follows at the beginning of October and November:

**Yates Field Market Quotas**

| Company | Barrels 10-1-1927 | Barrels 11-1-1927 |
|---|---|---|
| Mid-Kansas & Transcontinental | 22,940 | 17,347 |
| Marland of Texas | 1,634 | 363 |
| Gulf Production Co. | 369 | 559 |
| California Co. | 1,989 | 9,354 |
| Simms Oil Co. | 483 | 3,299 |
| McMan & Marland | 2,037 | 3,931 |
| Roxana Petroleum | 259 | 759 |
| Humble O. & R. Co. | 273 | 354 |
| Red Bank Oil Co. | ..... | 124 |
| Allsman & Bell | 16 | 718 |
| Savoy-Mazda | ..... | 192 |

## Yates Field 1-Hour Gauges, Estimated Potential Production and Leases Pro rata of Runs

| Company - Well | 10-1-27 One Hour Gauge | 11-1-27 One Hour Gauge | 10-1-27 24-Hours Est. Potential | 11-1-27 24-Hours Est. Potential | 10-1-27 Pro rata of Runs | 11-1-27 Pro rata of Runs |
|---|---|---|---|---|---|---|
| Mid-Kansas & Transcontinental | | | | | | |
| Yates A-1 | 149.67 | 131.00 | .... | .... | .... | .... |
| Yates A-2 | 827.18 | 801.00 | .... | .... | .... | .... |
| Yates A-3 | 99.40 | 97.00 | .... | .... | .... | .... |
| Yates A-4 | 300.44 | 211.00 | .... | .... | .... | .... |
| Yates A-5 | 212.40 | 159.00 | .... | .... | .... | .... |
| Yates A-6 | 1044.28 | 1039.00 | .... | .... | .... | .... |
| Yates A-7 | 781.28 | 1167.00 | .... | .... | .... | .... |
| Lease Total | 3414.85 | 3605.00 | 81.954 | 86.597 | 14.224 | 10.224 |
| Yates B-1 | 813.40 | 826.00 | .... | .... | .... | .... |
| Yates B-2 | 226.40 | 221.00 | .... | .... | .... | .... |
| Yates B-3 | 652.96 | 634.00 | .... | .... | .... | .... |
| Yates B-4 | ..... | 171.00 | .... | .... | .... | .... |
| Lease Total | 1692.76 | 1852.00 | 40.618 | 44.475 | 7.050 | 5.251 |
| Yates C-1 | 221.08 | 217.00 | 5.306 | 5.208 | 921 | 616 |
| Yates D-1 | ..... | 208.00 | .... | 4.992 | .... | 590 |
| Smith-Taylor 1 | 178.92 | 150.00 | .... | .... | .... | .... |
| Smith-Taylor 2 | .... | 84.00 | .... | .... | .... | .... |
| Lease Total | 178.92 | 234.00 | 4.294 | 5.637 | 745 | 666 |
| Marland Oil Co. of Texas | | | | | | |
| Yates A-1 | 392.48 | 128.00 | 9.417 | 3.072 | 1.634 | 363 |
| Gulf Production Co. | | | | | | |
| Smith 1 | 69.47 | 86.00 | 1.667 | 2.064 | 289 | 246 |
| Thompson 1 | 19.23 | 91.00 | .... | .... | .... | .... |
| Thompson 2 | .... | 18.00 | .... | .... | .... | .... |
| Lease Total | 19.23 | 109.00 | 462 | 2.649 | 80 | 313 |
| The California Co. | | | | | | |
| Yates 1 | 477.36 | 627.00 | .... | .... | .... | .... |
| Yates 3 | .... | 1041.00 | .... | .... | .... | .... |
| Yates 4 | .... | 132.00 | .... | .... | .... | .... |
| Yates 5 | .... | 963.00 | .... | .... | .... | .... |
| Lease Total | 477.36 | 2763.00 | 11.457 | 66.367 | 1.989 | 7.836 |
| Smith 1 | .... | 403.00 | .... | .... | .... | .... |
| Smith 2 | .... | 132.00 | .... | .... | .... | .... |
| Lease Total | .... | 535.00 | .... | 12.857 | .... | 1.518 |
| Simms Oil Co. | | | | | | |
| Smith 1 | 115.94 | 132.00 | .... | .... | .... | .... |
| Smith 2 | .... | 1032.00 | .... | .... | .... | .... |
| Lease Total | 115.94 | 1164.00 | 2.783 | 27.945 | 483 | 3.299 |
| McMann & Marland | | | | | | |
| Yates 1 | 312.24 | 200.00 | .... | .... | .... | .... |
| Yates 2 | .... | 547.00 | .... | .... | .... | .... |
| Yates 3 | 93.01 | 107.00 | .... | .... | .... | .... |
| Yates 4 | 83.70 | 106.00 | .... | .... | .... | .... |
| Yates 5 | .... | 183.00 | .... | .... | .... | .... |
| Yates 6 | .... | 151.00 | .... | .... | .... | .... |
| Lease Total | 488.95 | 1384.00 | 11.735 | 33.290 | 2.037 | 3.931 |
| Roxana Petroleum Corp. | | | | | | |
| Tippett 1 | 62.18 | 192.00 | 1.492 | 4.608 | 259 | 546 |
| Smith 1 | .... | 75.00 | .... | 1.800 | ..... | 213 |
| Humble Oil & Refining Co. | | | | | | |
| Smith 1 | 65.51 | 124.00 | 1.572 | 3.000 | 273 | 354 |
| Red Bank Oil Co. | | | | | | |
| Smith 1 | .... | 43.00 | .... | 1.032 | .... | 124 |
| Allsman & Bell | | | | | | |
| Riverbed 1 | 3.67 | 7.00 | .... | .... | .... | .... |
| Riverbed 2 | .... | 245.00 | .... | .... | .... | .... |
| Lease Total | 3.67 | 252.00 | 88 | 6.083 | 16 | 718 |
| Savoy-Mazda | | | | | | |
| Smith 1 | .... | 67.00 | .... | 1.625 | .... | 192 |
| Grand Total | 7,202.40 | 13,038.00 | 172.845 | 313.301 | 30.000 | 37.000 |

# California Gasoline Men to Hold Two-Day Meeting Nov. 15-16

LOS ANGELES Nov. 5

VARIOUS phases of the natural gasoline industry, operation, production and possibilities are to be covered in papers presented at the fall meeting of the California Natural Gasoline Association to be held at the Biltmore Hotel, Los Angeles, Nov. 15 and 16. It is expected that a number of Mid-Continent natural gasoline men will attend.

The program follows:

**Tuesday, Nov. 15**

8:00 a.m. Registration begins.
(Place—Lounge of Biltmore Hotel, to the left of the Main Lobby, Olive Street entrance.)

**Morning Session**

9:30 a.m. President's Address. (Biltmore Hotel, Supper Room.)

10:00 a.m. Paper: "Proposed Tentative Standard Pressure Charcoal Test for Gasoline Content of Natural Gas"; prepared by the Gas Testing Committee of the California Natural Gasoline Association and being a summary of its recommendations. Presented by P. S. Magruder, General Petroleum Corporation of California, subchairman of the Gas Testing Committee.
Discussion.

11:00 a.m. Paper: "Classification of the Various Grades of Natural Gasoline Produced in California"; prepared by the Specifications Committee of the California Natural Gasoline Association and presented by R. W. Garman, Union Oil Co. of California, chairman of the Specifications Committee.
Discussion.

11:30 a.m. Paper: "Recommendation for Standardization of Barometric Pressure in Natural Gas Measurement"; prepared in conjunction with the Metering Committee of the California Natural Gasoline Association and presented by Ben Laulhere, Midway Gas Co.
Discussion.

12:00 Noon to 1:30 p.m. Recess for Luncheon.

**Afternoon Session**
(Biltmore Hotel, Supper Room)

1:30 p.m. Paper: "The Determination of Vapor-Tension of Volatile Liquids"; a comparison of the method proposed by C. P. Beistle, U. S. Bureau of Explosives, with the present Bureau of Explosives Standard Vapor-Tension Test for Gasoline. Presented by C. D. Gard, Union Oil Co. of California.
Discussion.

2:30 p.m. Paper: "Analytical Gas and Gasoline Fractionation at Low Temperatures"; presented by Lester O. Warner of Barton, Manning & Warner, Consulting Engineers.
Discussion.

3:15 p.m. Paper: "Safety and Fire Prevention in Gasoline Plants"; presented by G. B. Shea, U. S. Bureau of Mines.
Discussion.

4:00 p.m. Paper: "Production of Natural Gasoline by Conservation of Vapors"; presented by Wallace G. Palmer, J. A. Campbell Co.
Discussion.

5:00 p.m. Adjournment.

**Wednesday, Nov. 16**
**(Biltmore Hotel, Supper Room)**
**Morning Session**

9:30 a.m. Address: "The Value of Natural Gasoline as a Constituent of Motor Fuel"; by Dr. George Granger Brown, Assistant Professor of Chemical Engineering, University of Michigan; Director of Research for the Association of Natural Gasoline Manufacturers. Through the courtesy of the Association of Natural Gasoline Manufacturers, Dr. Brown will present data accumulated in connection with the last two years' research program sponsored by that Association.

12:00 Noon to 1:30 p.m. Recess for Luncheon.

**Afternoon Session**

1:30 p.m. Continuation of Dr. Brown's address.
Discussion.

4:30 p.m. Adjournment.

**Evening Session**
**(Biltmore Hotel, Ball Room)**

7:00 p.m. Banquet and Entertainment for members and visitors. Toastmaster and speakers to be announced later.

## Drilling Supply Company Buys Pump Concern

Staff Special

LOS ANGELES, Nov. 4.—Effective Nov. 1, Emsco Derrick & Equipment Co. purchased the D & B Pump & Supply Co., the purchase including shops, equipment, stocks on hand, patent rights and branch stores. It is reported that the purchase involved a sum close to $3,000,000. D & B Pump had recently increased its authorized capital stock to $2,000,000.

The Emsco company is about five years old, and heretofore had not manufactured oil well pumping equipment. As a result of the transaction closed, the company will now be able to sell all equipment needed for the drilling of the well as well as the pumping equipment.

The same officials who have conducted the affairs of the Emsco organization will handle the affairs of the combined companies. E. M. Smith is president of the Emsco Derrick & Equipment Co., and the following are his assistants: W. A. Trout, vice president and general manager; E. W. Goeser, vice president in charge of engineering and production; Charles D. Wagner, vice president and director of sales, and J. S. A. Smith, secretary and treasurer.

D. Daniels, president of D & B Pump & Supply, and L. P. Burgess, vice president, are retiring in the near future from the organization. while J. O. Clutter, sales manager, will continue with the organization until the first of the year, at least, to help introduce Emsco officials to the various branch store managers, customers, etc., of the D & B Pump organization.

*E. M. SMITH*

Other executives and employes of the D & B Pump organization, as far as possible, will remain with the purchasing company, as Mr. Smith says he does not wish to make any important changes.

Mr. Smith, Mr. Trout and Mr. Clutter left Friday night for a tour of the oil fields of the United States.

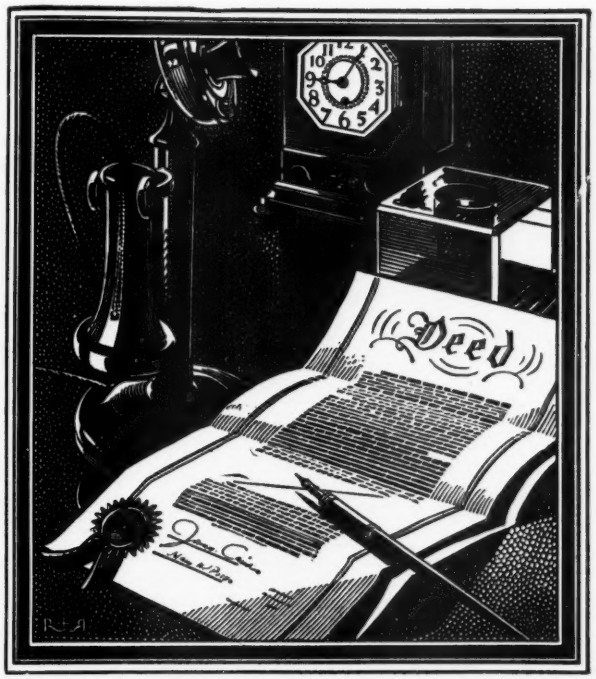
## Cities Service Executives Hold 3-Day Meeting

CLEVELAND, Nov 7.—Executives of the Cities Service Co., both in the research and operating branches, gathered in Cleveland for a 3-day meeting Nov. 3, 4 and 5. The conference was presided over by Harry D. Frueauff, vice president in charge of refining and marketing. About half of the time of the conference was devoted to research problems and the other half to sales plans for 1928, including an extensive advertising campaign. About 75 men were present from all company divisions in various parts of the country.

J. C. Willing, general manager of the Cities Service Oil Co. of Ohio, was host at a banquet Friday evening at which the chief speakers were F. R. Coates, head of the oil and gas division of the Cities Service Co., former Senator Theodore Burton and E. S. Jordan, president of the Jordan Motor Car Co.

Among those present at the conference were: F. R. Coates and Harry D. Frueauff, New York; C. E. Foster and A. M. McBurney, vice presidents Crew Levick Co., Philadelphia; H. E. Brandli, Cities Export & Import Co., New York; J. S. Cordell, general manager Cities Service Refining Co., Boston; P. M. Miskell, general manager Empire Refineries Inc.; W. H. Merritt, general manager Cities Service Oil Co., western division; O. J. Tuttle, sales manager wholesale division, Empire Refineries Inc., Tulsa; Herbert R. S. Straight, general manager Empire Gas & Fuel Co., and his assistant, Floyd C. Brown, Bartlesville, Okla.; C. E. Murray, secretary, Empire Gas & Fuel Co., Bartlesville; T. J. Spellman, manager retail sales and J. A. Kelley, wholesale sales manager, Cities Service Refining Co., Boston; T. O. Kennedy, general manager Ohio Public Service Co., Cleveland.

# Pa. to Florida... deal *closed* in 3 mins.




A PHILADELPHIA real estate man was seeking to buy a suburban property, but the woman who owned it was visiting in Florida. Letter after letter failed to secure the necessary terms. Then, to make matters worse, he learned that a competitor was after the property. He called the owner by Long Distance, got her promptly, and in 3 minutes settled the terms and made the purchase. Charges, $4.60. Amount involved, $25,000.

THOUSANDS OF TIMES DAILY, the long distance telephone renders a similar service to American business. Is a man too busy to leave his office? Does he dread a long trip? Is there an emergency? Is time important? Is it desirable to save expense? Long distance calls are the answer. Nearly any negotiation, purchase or sale that can be made face to face can be made in person by telephone.

The every-day use of the telephone for distant calls realizes many opportunities that otherwise would be lost. We suggest now that call across the state or continent that will clear up some pending transaction. We believe you will be surprised how little it will cost. . . . . *Number, please?*

## BELL LONG DISTANCE SERVICE

# Natural Gasoline Yield Shows Big Increase During 1927

LOS ANGELES, Nov. 5

FIGURES for the first nine months of 1927 indicate that the total production of natural gasoline in California for the year will run close to 480,000,000 gallons. This compares with 389,366,337 gallons in 1926 and 300,881,150 gallons in 1925. Figures are not available for 1924.

It is estimated that natural gasoline has a value of close to 10 cents a gallon in California this year. Most of the production is sold under contracts with prices ranging from 9 cents up to as high as 11 cents. Several contracts were closed in recent weeks over a period at 9½ cents.

The accompanying table gives the production by months for 1926 and most of 1927, figures for the last two years being compiled from the reports issued by the San Francisco office of the Bureau of Mines.

It will be noted that in January, 1926, plants operating numbered 147, but the total production of gasoline was only 28,944,791 gallons. In January, this year, 150 plants were operating and they produced 40,323,680 gallons. An increase of 3 plants brought about an increase of a little over 11,000,000 gallons of natural gasoline. This indicates that the plants operating are being constantly improved and assembled in large units. This is further shown in the report for last September when only 138 plants produced a total of 42,447,056 gallons.

In January, 1926, the average recovery in the state was 1.306 gallons to the 1000 cubic feet of gas treated. This increased to 1.419 gallons at the end of that year. But the banner month of them all was in September, this year, when the recovery was 1.466 gallons.

Stocks of natural gasoline are showing steady increases. Stocks are carried at the natural gasoline plants as well as at the refineries, where the product is used in blending. In January, 1926, stocks totaled 119,974 barrels, but this dropped to 88,804 barrels in February and dropped again in March that year to 81,886 barrels. But from then on, the increase has been steady, although in some months a small decrease was shown. At the end of September, this year, stocks had increased to 783,007 barrels, the greatest in history of the industry in California.

The following table gives the statistical history:

## California Natural Gasoline Statistics

| Year and month | No. plants idle | No. plants operating | Gas treated 1000 cu. ft. | Gasoline produced gallons | Recovery gallons per 1000 cu. ft. | Stocks barrels |
|---|---|---|---|---|---|---|
| 1926—Jan. | 19 | 147 | 22,155,418 | 28,944,791 | 1.306 | 119,974 |
| Feb. | 21 | 145 | 20,060,617 | 27,065,411 | 1.349 | 88,804 |
| March | 19 | 145 | 22,126,212 | 30,620,576 | 1.384 | 81,886 |
| April | 15 | 147 | 21,799,430 | 29,272,584 | 1.343 | 205,717 |
| May | 15 | 146 | 22,934,594 | 31,257,932 | 1.363 | 198,061 |
| June | 19 | 141 | 22,876,453 | 31,321,073 | 1.369 | 187,766 |
| July | 13 | 149 | 23,773,314 | 33,145,482 | 1.394 | 213,032 |
| Aug. | 12 | 146 | 23,675,897 | 33,092,040 | 1.398 | 276,425 |
| Sept. | 13 | 145 | 24,930,427 | 32,787,536 | 1.315 | 298,219 |
| Oct. | 19 | 145 | 25,675,147 | 35,757,873 | 1.393 | 272,119 |
| Nov. | 20 | 146 | 26,317,734 | 36,326,718 | 1.380 | 284,949 |
| Dec. | 20 | 149 | 28,039,530 | 39,774,321 | 1.419 | 318,352 |
| Totals for year—average | | | 284,364,773 | 389,366,337 | 1.369 | |
| 1927—Jan. | | 150 | 28,523,595 | 40,323,680 | 1.414 | 368,635 |
| Feb. | | 149 | 26,464,660 | 36,304,814 | 1.372 | 459,695 |
| March | | 149 | 29,264,487 | 41,315,907 | 1.412 | 567,677 |
| April | | 148 | 28,980,131 | 40,796,983 | 1.408 | 609,422 |
| May | | 147 | 28,838,564 | 40,969,464 | 1.421 | 611,549 |
| June | | 147 | 26,882,024 | 39,371,684 | 1.465 | 608,542 |
| July | | 145 | 27,765,178 | 39,737,413 | 1.431 | 622,582 |
| Aug. | | 143 | 27,991,867 | 41,013,882 | 1.465 | 748,692 |
| Sept. | | 138 | 28,958,523 | 42,447,056 | 1.466 | 783,007 |

## Attractive Brick and Stucco Service Station

*Of brick and stucco is this service station opened on Oct. 1 at Ypsilanti, Mich. by the Abbott Gasoline Co., Ann Arbor. It has an outside drinking fountain, rest rooms and six gasoline pumps dispensing White Star gasoline. A carton of thin water glasses, which was given away to each motorist purchasing five or more gallons of gasoline on the two opening days, proved quite an attraction, and helped to sell 3,441 gallons of gasoline the first day.*

# *It's Both Faucet Wrench —and Hose Spanner!*

*Wheaton No. 8 Combination Wrench and Hose Spanner*

THIS No. 8 Wheaton Wrench plays a dual role—plays both parts well. It's both faucet wrench and hose spanner. And it is long enough to give ample leverage as either wrench or spanner. Its double utility has made it a popular tank truck accessory—so much so that many companies have standardized on it.

The Wheaton No. 8 Wrench is a malleable casting of the highest quality, possessing that toughness which assures freedom from breakage and, at the same time, that degree of hardness which assures retention of shape. Though only a wrench, it is made with the same skilled craftsmanship as Wheaton Faucets, Valves, Joints, Couplings, Fillers, Nozzles and Fittings.

Write today for a sample of the Wheaton No. 8 Wrench. If it does not fully meet with your entire approval, you may return it for full credit or refund. Also ask for the Wheaton Catalog, which describes and illustrates other Wheaton Products.

A. W. WHEATON BRASS WORKS, NEWARK, N. J.

# Wheaton

FAUCETS · VALVES · JOINTS · COUPLINGS · FILLERS · NOZZLES · FITTINGS

# Compilation Of Mid-Continent Refinery Operations

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National Petroleum News

## Mid-Continent Refinery Operations Week Ended November 4, (By Telegraph)

| | Kansas | Oklahoma | North & Cent. Texas | North La.-Ark. | Total Week Ended Nov. 4 | Total Week Ended Oct. 7 |
|---|---|---|---|---|---|---|
| Plants Reporting | 12 | 28 | 27 | 12 | 79 | 124 |
| Crude Capacity (bbls.) | 92,000 | 157,200 | 104,500 | 54,900 | 408,600 | 470,100 |
| Cracking Capacity | 30,700 | 52,600 | 16,200 | 22,700 | 122,200 | 110,750 |
| Da. Av. Crude Runs | 51,990 — 3.8 | 101,953 — 7.8 | 625,000 + 6.2 | 42,648 + 1.2 | 259,113 — 2.5 | 260,929 |
| Da. Av. Other Oils | 6,477 — 24.6 | 1,411 — 5.5 | 6,553 + 23.0 | 2,106 + 21.1 | 16,547 — 3.5 | 13,180 |
| **GASOLINE—Gallons** | | | | | | |
| Stocks, Oct. 28 | 7,135,000 | 33,299,000 | 18,109,000 | 4,999,000 | 63,542,000 | 57,037,000 |
| Prod. 10-28 to 11-4 | 8,238,000 — 9.3 | 15,007,000 — 14.7 | 6,905,000 + 5.4 | 3,544,000 — 10.6 | 33,694,000 — 9.4 | 33,794,000 |
| Ship. 10-28 to 11-4 | 7,666,000 — 6.6 | 18,673,000 + 0.3 | 7,534,000 + 12.3 | 4,185,000 + 6.4 | 38,058,000 + 1.6 | 34,708,000 |
| Stocks, Nov. 4 | 7,707,000 + 8.0 | 29,633,000 — 11.0 | 17,480,000 — 3.5 | 4,358,000 — 12.8 | 59,178,000 — 6.9 | 56,123,000 |
| Ratio Sales to Prod. | 93.1% | 124.4% | 109.1% | 118.1% | 113.0% | 102.7% |
| **KEROSENE—Gallons** | | | | | | |
| Stocks, Oct. 28 | 3,472,000 | 6,206,000 | 994,000 | 568,000 | 11,240,000 | 10,046,000 |
| Prod. 10-28 to 11-4 | 1,263,000 — 20.1 | 2,577,000 — 14.2 | 1,301,000 + 4.6 | 471,000 — 1.9 | 5,612,000 — 11.0 | 5,376,000 |
| Ship. 10-28 to 11-4 | 1,445,000 + 3.4 | 2,494,000 — 13.5 | 1,199,000 — 22.7 | 639,000 + 13.3 | 5,777,000 — 9.7 | 5,123,000 |
| Stocks, Nov. 4 | 3,290,000 — 5.2 | 6,289,000 + 1.3 | 1,096,000 + 10.3 | 400,000 — 29.6 | 11,075,000 — 1.5 | 10,299,000 |
| Ratio Sales to Prod. | 114.4% | 96.8% | 92.2% | 135.7% | 102.9% | 95.3% |
| **STOVE DISTILLATE—Gallons** | | | | | | |
| Stocks, Oct. 28 | 4,958,000 | 7,445,000 | 2,153,000 | 6,000 | 14,562,000 | 14,261,000 |
| Prod. 10-28 to 11-4 | 445,000 — 17.3 | 427,000 — 31.4 | 258,000 — 19.1 | 61,000 — 6.2 | 1,191,000 — 22.9 | 1,667,000 |
| Ship. 10-28 to 11-4 | 319,000 + 57.9 | 325,000 — 29.8 | 304,000 + 24.6 | 31,000 — 54.4 | 979,000 + 0.2 | 1,877,000 |
| Stocks, Nov. 4 | 5,084,000 + 2.5 | 7,547,000 + 1.4 | 2,107,000 — 2.1 | 36,000 +500.0 | 14,774,000 + 1.5 | 14,051,000 |
| Ratio Sales to Prod. | 71.7% | 76.1% | 117.8% | 50.8% | 82.2% | 112.6% |
| **GAS OIL—Gallons** | | | | | | |
| Stocks, Oct. 28 | 8,839,000 | 40,125,000 | 17,668,000 | 8,413,000 | 75,045,000 | 74,619,000 |
| Prod. 10-28 to 11-4 | 1,351,000 — 9.9 | 3,936,000 + 93.3 | 1,951,000 + 60.8 | 2,018,000 + 14.0 | 9,256,000 + 42.0 | 6,316,000 |
| Ship. 10-28 to 11-4 | 1,325,000 + 16.9 | 3,523,000 + 69.9 | 1,913,000 + 89.0 | 1,813,000 — 13.3 | 8,574,000 + 35.9 | 7,242,000 |
| Stocks, Nov. 4 | 8,865,000 + 0.3 | 40,538,000 + 1.0 | 17,706,000 + 0.2 | 8,618,000 + 2.4 | 75,726,000 + 0.9 | 73,693,000 |
| Ratio Sales to Prod. | 98.1% | 89.5% | 98.1% | 89.8% | 92.6% | 114.7% |
| **FUEL OIL—Gallons** | | | | | | |
| Stocks, Oct. 28 | 14,999,000 | 46,701,000 | 31,701,000 | 10,316,000 | 103,717,000 | 105,149,000 |
| Prod. 10-28 to 11-4 | 5,691,000 + 6.9 | 5,845,000 — 23.5 | 7,827,000 + 3.4 | 6,160,000 + 5.9 | 25,523,000— 3.1 | 26,366,000 |
| Ship. 10-28 to 11-4 | 5,175,000 — 6.4 | 6,148,000 — 22.8 | 7,202,000 — 20.7 | 6,461,000 + 4.4 | 24,986,000— 13.1 | 25,051,000 |
| Stocks, Nov. 4 | 15,515,000 + 3.4 | 46,398,000 — 0.7 | 32,326,000 + 2.0 | 10,015,000 — 2.9 | 104,254,000+ 0.5 | 106,464,000 |
| Ratio Sales to Prod. | 90.9% | 105.2% | 92.0% | 104.9% | 97.9% | 95.0% |

## Gasoline Produced by Various Methods, Week Ended November 4

| | Kansas | % of Total | Oklahoma | % of Total | Texas | % of Total | Louisiana-Arkansas | % of Total | Total | % of Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Straight Run | 5,253,000 | 63.8 | 10,534,000 | 70.2 | 5,628,000 | 81.5 | 1,689,000 | 47.6 | 23,104,000 | 68.6 |
| Cracked | 2,353,000 | 28.5 | 3,074,000 | 20.5 | 936,000 | 13.6 | 1,339,000 | 37.8 | 7,702,000 | 22.8 |
| Natural | 632,000 | 7.7 | 1,399,000 | 9.3 | 341,000 | 4.9 | 516,000 | 14.6 | 2,888,000 | 8.6 |
| Total | 8,238,000 | | 15,007,000 | | 6,905,000 | | 3,544,000 | | 33,694,000 | |

**+ or — columns are changes over previous week.**

# Mid-Continent Refiners Curtail Crude Oil Runs

Staff Special—By Telegraph
TULSA, Nov. 8

SUBSTANTIAL reductions in both gasoline stocks and crude runs were reported to NATIONAL PETROLEUM NEWS by 79 Mid-Continent refineries in the week ended Nov. 4. Crude charges were reduced 6,500 barrels daily average. Other oil charges were virtually unchanged.

Gasoline stocks were reduced 4,362,000 gallons to 59,178,000 gallons. This is largest reduction in stocks since the week ended Sept. 16. Shipments last week also increased approximately 600,000 gallons to 38,058,000 gallons.

Oklahoma refiners set the pace both in gasoline stock reduction and crude charge cut. They reduced crude charges approximately 9,000 barrels daily average and kept other oils charges virtually unchanged. Gasoline production in Oklahoma was re-

### Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended Nov. 4. Changes in stocks figured from Oct. 28.

**GASOLINE**

| | Gallons |
|---|---|
| Production | 143,738,000 |
| Shipments | 140,683,000 |
| Net change in stocks | + 3,655,000 |
| Ratio sales to production | 97.9% |

**KEROSENE**

| | Gallons |
|---|---|
| Production | 25,065,000 |
| Shipments | 24,289,000 |
| Net change in stocks | + 776,000 |
| Ratio sales to production | 96.9% |

**STOVE DISTILLATE**

| | Gallons |
|---|---|
| Production | 5,879,000 |
| Shipments | 5,156,000 |
| Net change in stocks | + 723,000 |
| Ratio sales to production | 87.7% |

**GAS OIL**

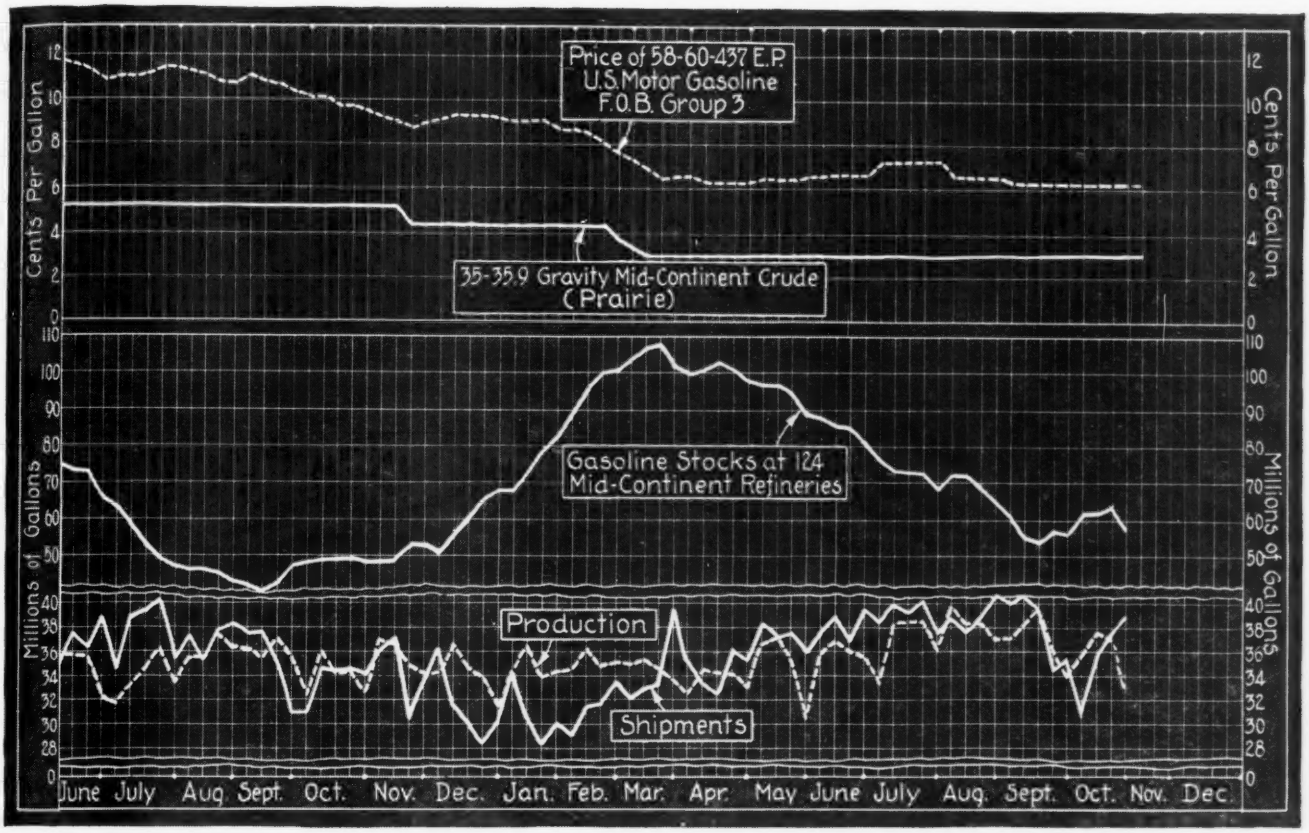
| | Gallons |
|---|---|
| Production | 28,105,000 |
| Shipments | 26,071,000 |
| Net change in stocks | + 2,034,000 |
| Ratio sales to production | 92.8% |

**FUEL OIL**

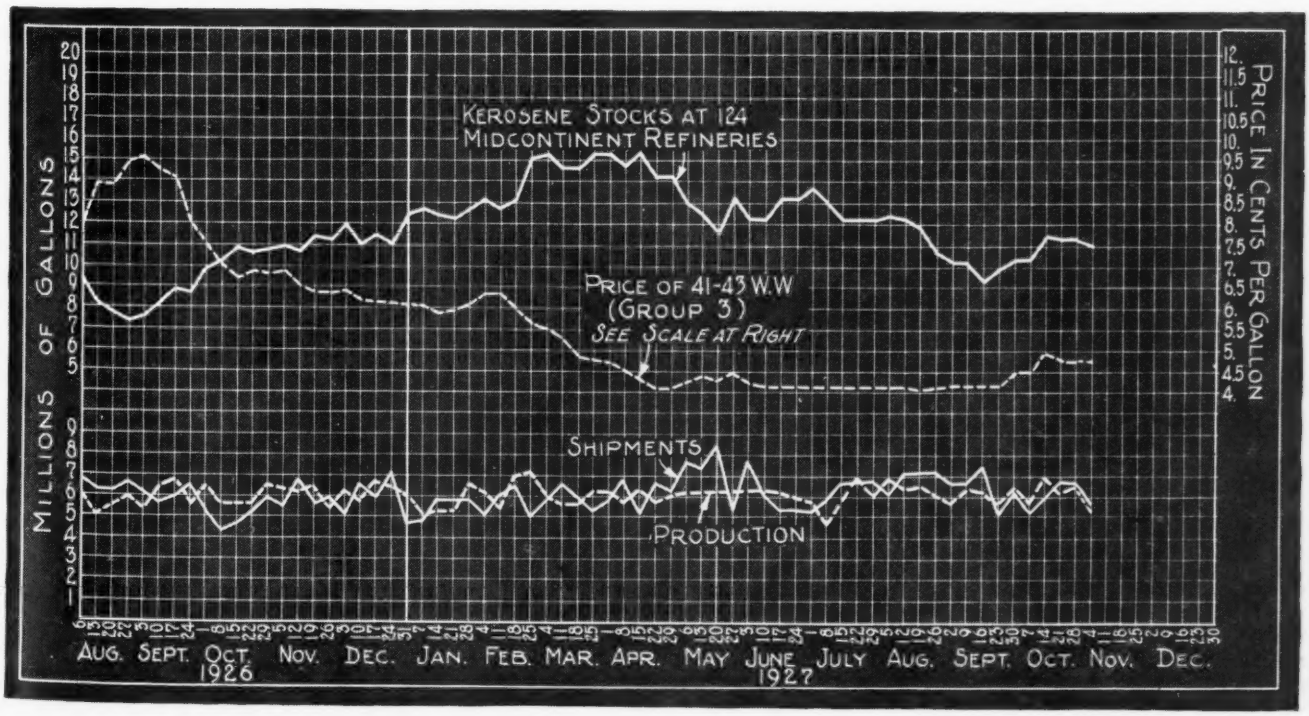
| | Gallons |
|---|---|
| Production | 105,380,000 |
| Shipments | 107,590,000 |
| Net change in stocks | — 2,210,000 |
| Ratio sales to production | 102.1% |

# Barometer of Mid-Continent Refinery Market—Week Ending November 4

***Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 124 Plants to National Petroleum News***

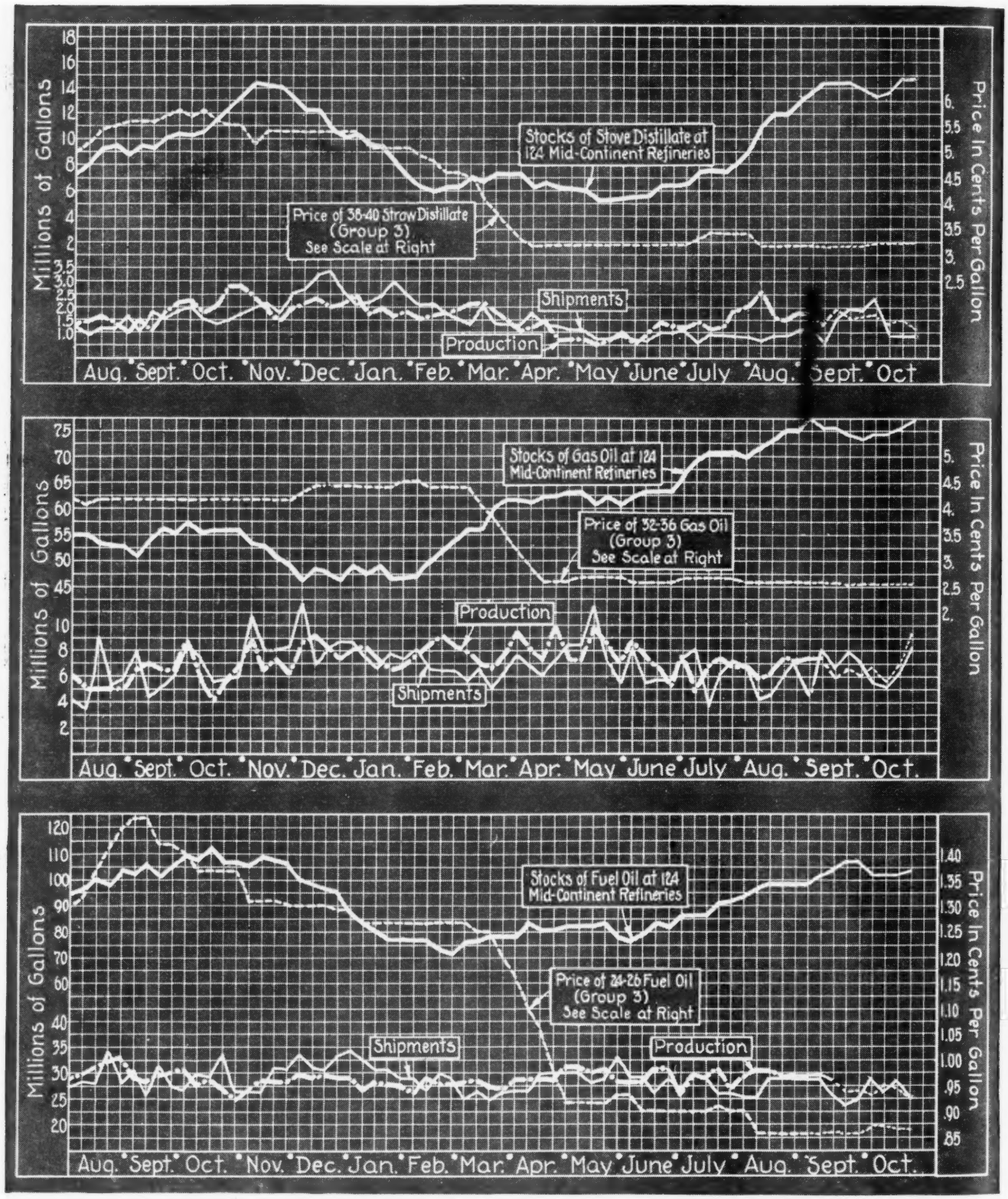

Price of 58-60-437 E.P. U.S. Motor Gasoline F.O.B. Group 3
35-35.9 Gravity Mid-Continent Crude (Prairie)
Cents Per Gallon
Gasoline Stocks at 124 Mid-Continent Refineries
Millions of Gallons
Production
Shipments
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.

*Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date shown in table on opposite page*


KEROSENE STOCKS AT 124 MIDCONTINENT REFINERIES
PRICE OF 41-43 W.W (GROUP 3) SEE SCALE AT RIGHT
SHIPMENTS
PRODUCTION
MILLIONS OF GALLONS
PRICE IN CENTS PER GALLON
AUG. SEPT. OCT. NOV. DEC. JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.
1926
1927

# Barometer of Mid-Continent Refinery Market—Week Ending November 4

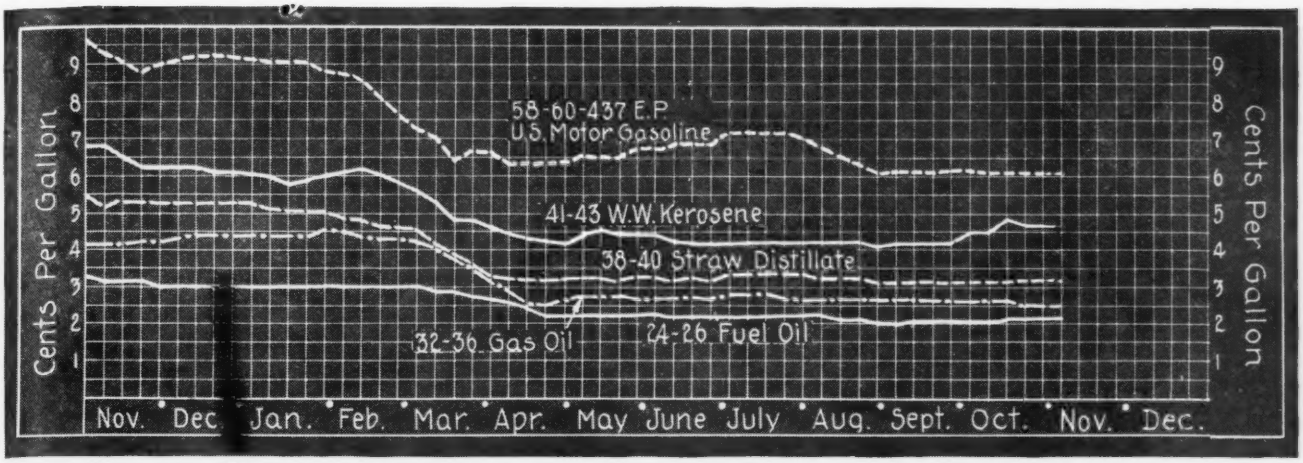
***Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 124 Plants to National Petroleum News***


Millions of Gallons
Price In Cents Per Gallon
Stocks of Stove Distillate at 124 Mid-Continent Refineries
Price of 38-40 Straw Distillate (Group 3) See Scale at Right
Shipments
Production
Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct
Millions of Gallons
Price In Cents Per Gallon
Stocks of Gas Oil at 124 Mid-Continent Refineries
Price of 32-36 Gas Oil (Group 3) See Scale at Right
Production
Shipments
Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct.
Millions of Gallons
Price In Cents Per Gallon
Stocks of Fuel Oil at 124 Mid-Continent Refineries
Price of 24-26 Fuel Oil (Group 3) See Scale at Right
Shipments
Production
Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct.

duced 2,600,000 gallons and shipments were steady at 18,673,000 gallons. This gave Oklahoma refiners an opportunity to reduce gasoline stocks more than 2,500,000 gallons.

Kansas refineres cut crude runs approximately 2,000 barrels but were unable to ship their entire production. Stocks in that area were increased approximately 500,000 gallons. Texas refiners increased crude runs almost 4,000 barrels, increased shipments of gasoline 800,000 gallons, and reduced stocks 600,000 gallons. A large export order was placed recently in that field on which the gasoline is to be shipped by Nov. 12 which probably accounts for both the larger crude runs and larger shipments. The Louisiana-Arkansas group of refiners kept crude runs comparatively steady

## Current Prices of Principal Mid-Continent Refined Products


Cents Per Gallon
58-60-437 E.P. U.S. Motor Gasoline
41-43 W.W. Kerosene
38-40 Straw Distillate
32-36 Gas Oil
24-26 Fuel Oil
Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.

*Prices shown above are on Group 3 basis and extended to date shown in Refinery Market Tables in Market Section of this Issue*

and increased other oil charges only slightly.

Kerosene production was curtailed in each district except Texas where three large refiners have been buying goods for their own needs causing a scarcity of the product. Kansas refiners reduced kerosene production about 300,000 gallons. Shipments increased about 40,000 gallons. Oklahoma refiners reduced production almost 500,000 gallons. Shipments were off almost 300,000 gallons. Texas refiners increased kerosene production approximately 60,000 gallons while shipments fell off 350,000 gallons. For the entire area kerosene production and shipments were reduced 600,000 gallons each. Stocks were reduced 163,000 gallons.

Stove distillate stocks continued to increase as weather was mild in most of the distillate consuming territory. Production was off 350,000 gallons. Shipments were steady. Stocks increased 212,000 gallons to 14,774,000 gallons.

Gas oil and fuel oil stocks were increased, the former by 680,000 gallons and the latter approximately 500,000 gallons. Gas oil production increased 2,700,000 gallons and shipments increased 2,200,000 gallons. Fuel oil production was off 800,000 gallons. Shipments were off 3,700,000 gallons.

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LOS ANGELES, California, November 4.—The chamber of Mines and Oil of California will sponsor a special train to the American Petroleum Institute convention at Chicago. The special will leave Los Angeles over the Santa Fe railway at 5.30 p.m. on Friday, Dec. 2, and arrive Chicago 10:30 a.m., Monday, Dec. 5.

The board of directors of the chamber has requested the Wildcats to take charge of arrangements in connection with this trip and this committee is bending every effort towards making the trip an enjoyable one. It is expected that the party will be made up of more than 100 prominent California oil men.

# Reform Up to Oil Industry Says Louisiana Official

HOUSTON, Nov. 4

REFORM must come from within the industry itself, William F. Chisholm, director of the minerals division, Conservation Commission of Louisiana, Shreveport, told gas men assembled at Houston this week.

"The gas industry," he said, "must get away from the idea of conservation as the result of state law and get down to the realization that effective conservation of gas is a sound business proposition."

After saying that leaders of the petroleum industry have now designated waste of natural gas as one of its greatest evils, Mr. Chisholm continued:

"Gas men, interested in gas conservation, should stand firmly back of any well directed effort on the part of state authority or of the petroleum industry itself toward the correction of this glaringly wasteful practice.

"Finally, I wish to point out that without cooperation of the gas industry all gas conservation laws will fail. The most effective, the only effective development of gas conservation will be that which the industry plans and works out."

Discussion that followed Mr. Chisholm's address before the southwest division, natural gas department, American Gas Association, was confined to concurrence in his remarks as expressed by Frank Chase of the Lone Star Gas Co., Dallas, and others.

The meeting was largely devoted to gas problems, both as regards natural and manufactured products, together with their distribution. A discussion of problems found in field development in the Texas Gulf Coast by Frank Kirk of the Houston Pipeline Co., was abstracted in the November 2 issue of NATIONAL PETROLEUM NEWS.

With the exception of Mr. Chisholm's address and a paper of Bureau of Mines engineers On Standardizing Open Flow from Natural Gas Wells, virtually all other discussions dealt with distributing problems.

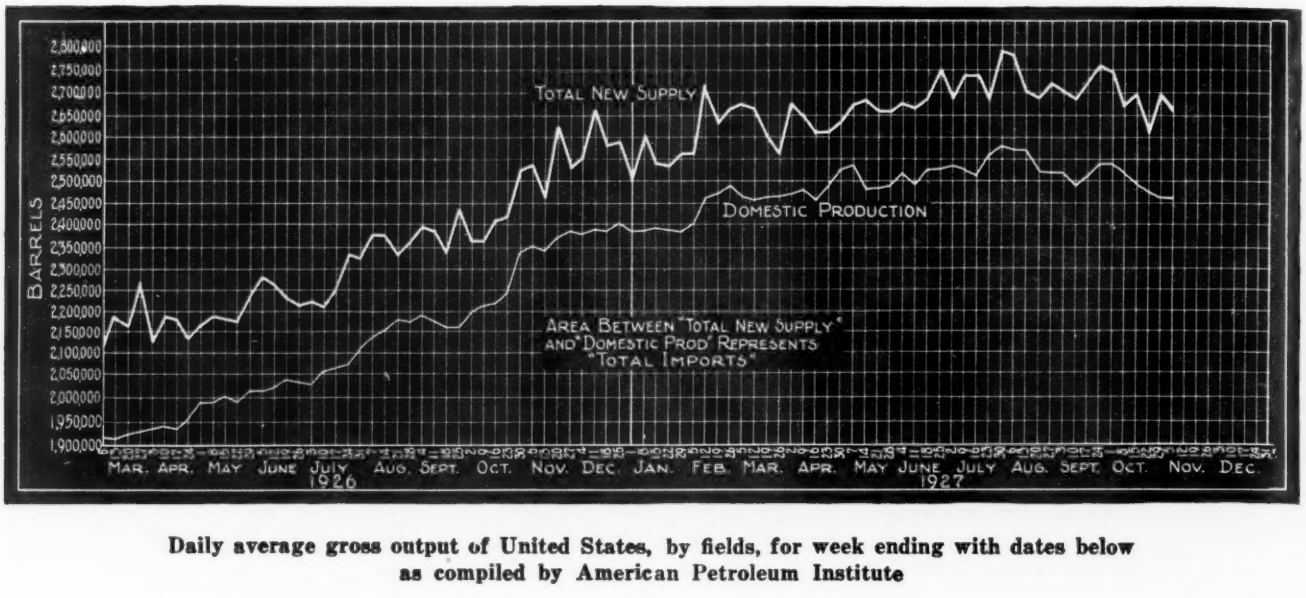
Mr. Chisholm said some progress has been made in conservation where gas alone is the object of development, but where gas and oil are developed together, he said, "the situation could hardly be worse." He describes reckless line fighting under the present leasing system as the bane of the industry since the time of Colonel Drake.

One serious difficulty found by Mr. Chisholm in the enforcement of any restrictions on open flow capacity is the fact that in some areas sand and water conditions make open flow measurements so dangerous in practice that they should be forbidden entirely. Eventually, he feels, in order to eliminate the waste involved in blowing a well for measurement all withdrawals probably will be based on closed pressure measurements.

Mr. Chisholm referred to reckless over-pulling of the Monroe gas field in its early history, but described it as now a safe investment because of conservation measures adopted and enforced. The field's pressure decline and open flow decline have been watched. Its immense area has been divided into zones based on relative closed pressure, and mapped, and the data on each zone segregated for being made available to the public.

There are now, according to Mr. Chisholm, practically no bad wells left in the Monroe field, which he described further as a "monument to impartial enforcement of conservation law and cooperation of the operators."

# Daily Average Crude Oil Production and Imports




**Daily average gross output of United States, by fields, for week ending with dates below as compiled by American Petroleum Institute**

## PRODUCTION SUMMARY

| | Nov. 5 | Oct. 29 |
|---|---|---|
| Production east of Rockies | 1,830,350 | 1,836,950 |
| Decrease | | 6,600 |
| Total production in U. S. | 2,453,450 | 2,466,550 |
| Decrease | | 13,100 |
| Crude oil imports | 207,713 | *219,143 |
| Decrease | | 11,430 |
| Total crude supply | 2,661,163 | 2,685,693 |
| Increase | | 24,530 |

*Revised

| OKLAHOMA | Nov. 5 | Oct. 29 |
|---|---|---|
| North Braman | 2,900 | 2,750 |
| South Braman | 2,150 | 2,250 |
| Blackwell | 3,900 | 3,900 |
| Hubbard | 3,600 | 3,400 |
| Thomas | 2,450 | 2,850 |
| Tonkawa | 16,900 | 17,150 |
| Garber | 10,150 | 10,150 |
| Burbank | 38,850 | 35,850 |
| Osage, outside Burbank | 30,550 | 30,600 |
| Watchorn | 1,700 | 1,700 |
| Cushing | 21,250 | 21,250 |
| Yale Jennings | 9,550 | 9,550 |
| Davenport | 2,750 | 2,650 |
| Bristow-Slick | 24,950 | 24,900 |
| North Okmulgee | 16,200 | 16,200 |
| Lyons-Deaner | 6,400 | 6,400 |
| Stroud | 1,250 | 1,250 |
| Cromwell | 11,100 | 11,300 |
| Papoose | 5,900 | 6,100 |
| Wewoka | 12,750 | 12,700 |
| Seminole | 63,700 | 64,700 |
| Bowlegs | 119,200 | 121,300 |
| Searight | 26,150 | 26,300 |
| Little River | 45,850 | 45,050 |
| Earlsboro | 149,700 | 155,450 |
| Duncan district | 6,800 | 6,950 |
| Graham | 6,500 | 6,500 |
| Fox | 1,900 | 1,900 |
| Healdton | 14,800 | 14,900 |
| Hewitt | 9,300 | 9,300 |
| Scholem Alechem | 13,000 | 13,000 |
| Others | 69,200 | 69,450 |
| Total Oklahoma | 751,350 | 757,700 |
| Decrease | | 6,350 |

| KANSAS | | |
|---|---|---|
| Greenwood County | 32,500 | 32,200 |
| Florence-Covert | 1,500 | 1,500 |
| Peabody-Elbing | 3,850 | 3,850 |
| Eldorado-Towanda | 14,300 | 14,300 |
| Augusta-Fox-Bush | 4,250 | 4,200 |
| Rainbow Bend | 2,250 | 2,100 |
| Russell | 2,500 | 2,500 |
| Churchill | 14,300 | 14,100 |
| Others | 31,700 | 30,600 |
| Total, Kansas | 107,150 | 105,350 |
| Increase | | 1,800 |

| NORTH LOUISIANA | | |
|---|---|---|
| Homer | 4,750 | 4,550 |
| Haynesville | 7,150 | 7,150 |
| Caddo, light | 12,200 | 12,650 |
| Caddo, heavy | 4,750 | 4,700 |
| De Soto, Red River | 3,700 | 3,950 |
| Elm Grove | 650 | 700 |
| Bellevue | 1,200 | 1,200 |
| Cotton Valley | 5,150 | 5,150 |
| Urania | 9,150 | 9,200 |
| Pleasant Hill | 1,250 | 1,600 |
| Total, N. Louisiana | 49,950 | 50,850 |
| Decrease | | 900 |

| ARKANSAS | | |
|---|---|---|
| El Dorado | 6,100 | 6,100 |
| Smackover, light | 9,550 | 9,750 |
| Smackover, heavy | 76,250 | 76,900 |
| Stephens | 1,200 | 1,200 |
| Nevada | 3,000 | 3,000 |
| Lisbon | 2,900 | 3,000 |
| Others | 100 | 100 |
| Total, Arkansas | 99,100 | 100,050 |
| Decrease | | 950 |

| TEXAS (OUTSIDE GULF COAST) | | |
|---|---|---|
| **Panhandle District** | | |
| Hutchinson County | 62,000 | 64,600 |
| Carson County | 7,850 | 8,100 |
| Gray County | 15,600 | 15,500 |
| Wheeler County | 1,200 | 1,300 |
| Others | 100 | 50 |
| Total, Panhandle District | 86,750 | 89,550 |
| Decrease | | 2,800 |
| **North Texas** | | |
| Burkburnett | 12,600 | 12,750 |
| Electra | 12,450 | 12,200 |
| Iowa Park and K-M-A | 2,000 | 2,100 |
| Wilbarger | 11,000 | 11,550 |
| Archer County | 23,000 | 22,850 |
| Montague-Cooke | 16,400 | 16,600 |
| Others | 650 | 600 |
| Total, North Texas | 78,100 | 78,650 |
| Decrease | | 550 |
| **West Central Texas** | | |
| Stephens County | 8,100 | 8,200 |
| Eastland-Desdemona | 8,500 | 8,700 |
| Brown County | 19,500 | 19,000 |
| Coleman County | 1,100 | 1000 |
| Callahan County | 3,800 | 3,750 |
| Shackleford County | 5,200 | 5,250 |
| Young County | 9,650 | 9,750 |
| Throckmorton County | 1,200 | 1,100 |
| Palo Pinto County | 500 | 600 |
| Others | 1,350 | 1,400 |
| Total, West Central Texas | 58,900 | 58,750 |
| Increase | | 150 |
| **West Texas** | | |
| Jones County | 1,550 | 1,500 |
| Mitchell and Scurry Counties | 3,550 | 3,550 |
| Howard County | 4,600 | 3,550 |
| Reagan County | 22,750 | 23,250 |
| Crane & Upton Counties | 130,550 | 127,400 |
| Crockett County | 2,550 | 2,350 |
| Pecos County | 32,450 | 30,700 |
| Winkler | 17,650 | 15,750 |
| Others | 2,750 | 2,900 |
| Total, West Texas | 218,400 | 210,950 |
| Increase | | 7,450 |
| **East Central Texas** | | |
| Mexia | 8,900 | 8,950 |
| Currie | 600 | 600 |
| Richland | 700 | 700 |
| Wortham | 2,600 | 2,600 |
| Corsicana-Powell | 13,400 | 13,500 |
| Nigger Creek | 2,500 | 2,400 |
| Total, East Central Texas | 28,700 | 28,750 |
| Decrease | | 50 |
| **Southwest Texas** | | |
| Luling | 15,000 | 15,200 |
| Lytton Springs | 1,450 | 1,500 |
| Somerset | 850 | 850 |
| Laredo District | 8,100 | 8,200 |
| Piedras Pintas | 400 | 400 |
| Others | 400 | 400 |
| Total, Southwest Texas | 26,200 | 26,550 |
| Decrease | | 350 |
| Total, Texas (Outside Gulf Coast) | 497,050 | 493,200 |
| Increase | | 3,850 |

| GULF COAST | | |
|---|---|---|
| **Coastal Texas** | | |
| West Columbia | 9,000 | 9,050 |
| Damon Mound | 850 | 850 |
| Big Creek | 3,400 | 3,500 |
| Boling | 2,450 | 2,300 |
| Blue Ridge | 2,300 | 3,000 |
| Pierce Junction | 10,800 | 10,800 |
| Humble | 1,900 | 2,000 |
| Goose Creek | 7,800 | 7,700 |
| South Liberty | 2,300 | 2,400 |
| Hull | 15,800 | 16,050 |
| Saratoga | 1,000 | 1,050 |
| Batson | 1,300 | 1,300 |
| Sour Lake | 4,000 | 4,100 |
| Spindletop | 52,800 | 53,500 |
| Orange County | 4,200 | 4,550 |
| Others | 2,700 | 2,800 |
| Total, Coastal Texas | 122,600 | 125,050 |
| Decrease | | 2,450 |
| **Coastal Louisiana** | | |
| Vinton | 4,800 | 4,850 |
| Lockport | 5,600 | 5,300 |
| Evangeline | 1,400 | 1,300 |
| Edgerly | 2,000 | 2,200 |
| Others | 1,300 | 1,150 |
| Total, Coastal Louisiana | 15,100 | 14,800 |
| Increase | | 300 |
| Total, Gulf Coast | 137,700 | 139,850 |
| Decrease | | 2,150 |

| ROCKY MOUNTAIN | | |
|---|---|---|
| **Wyoming** | | |
| Salt Creek | 33,400 | 34,050 |
| Grass Creek | 2,700 | 2,500 |
| Elk Basin | 1,100 | 1,050 |
| Big Muddy | 2,800 | 2,950 |
| Lost Soldier | 2,500 | 2,200 |
| Rock River | 2,700 | 2,700 |
| Lance Creek | 1,300 | 1,350 |
| Teapot Dome | 950 | 1,000 |
| Others | 3,950 | 4,200 |
| Total Wyoming | 51,400 | 52,000 |
| Decrease | | 600 |
| **Montana** | | |
| Cat Creek | 1,950 | 1,950 |
| Sunburst | 11,500 | 11,500 |
| Others | 250 | 250 |
| Total, Montana | 13,700 | 13,700 |
| **Colorado** | | |
| Moffat (Craig) | 1,450 | 1,550 |
| Fort Collins | 2,550 | 3,200 |
| Florence | 1,100 | 900 |
| Others | 1,150 | 1,350 |
| Total, Colorado | 6,250 | 7,000 |
| Decrease | | 750 |
| **New Mexico** | | |
| Table Mesa | 50 | 100 |
| Artesia | 1,250 | 1,250 |
| Hogback | 300 | 300 |
| Rattlesnake | | 500 |
| Others | 100 | 100 |
| Total, New Mexico | 1,700 | 2,250 |
| Total, Rocky Mountain | 73,050 | 74,950 |
| Decrease | | 1,900 |

| CALIFORNIA | Nov. 5 | Oct. 29 |
|---|---|---|
| Santa Fe Springs | 39,000 | 39,000 |
| Long Beach | 100,000 | 98,500 |
| Huntington Beach | 61,000 | 61,000 |
| Torrance | 20,000 | 20,000 |
| Dominguez | 15,000 | 15,000 |
| Rosecrans | 8,000 | 8,000 |
| Inglewood | 32,500 | 32,500 |
| Midway-Sunset | 84,000 | 84,000 |
| Ventura Avenue | 53,600 | 57,600 |
| Seal Beach | 51,000 | 56,000 |
| Others | 159,000 | 158,000 |
| Total, California | 623,100 | 629,600 |
| Decrease | | 6,500 |

| EASTERN | | |
|---|---|---|
| (Including Ill., Ind., Ky., Ohio, W. Va., Pa., and N. Y.) | 115,000 | 115,000 |

# Three New Pools Opened, One Extended; Mid-Continent Calls It a Week

By Lawrence E. Smith

N. P. N. STAFF WRITER

TULSA, Nov. 6

AFTER rocking along for several weeks with no news of consequence, the Mid-Continent came forth with a full crop the past week, Oklahoma supplying most of it.

Item: A 5,000-barrel well on the east side of the Burbank field, opening new territory.

Item: A wildcat three miles south of the Little River pool of Seminole county, making more than 100 barrels per hour.

Item: A 1000-barrel well drilled in Nov. 6 by Mid-Continent Petroleum Corp. two miles due east of Little River.

Item: A 90-barrel per hour well one and a half miles northwest of production in the Bowlegs field.

Thus, with three new pools opened and another extended, there were provided plenty of answers for the folks who have been wondering what the country would do for light oil about next Arbor Day.

The Burbank well, in the NE NE of 20-27-6, is discussed at greater length in another column of this issue. It hurdles a dry streak along the east side of Burbank and puts a speculative value on some acreage to be sold Dec. 12 at Pawhuska, when 19,360 acres will be disposed of at public auction. A. G. Oliphant and associates are the owners of the big well.

That much discussed well of the Independent Oil & Gas Co. in the SE NW of 23-7-6 finally ended the discussion by coming in after it had been given up by everybody but the owners. It made 156 barrels the first hour and 123 barrels the second hour.

Over in Sec. 22 and about a half mile southwest of this Independent well, the Barnsdall Oil Co. started a wildcat a long time ago, got some oil in the Viola lime above the Wilcox, got scared at the thought of opening a new pool, and stopped there. The Independent had made a deal with the Highway Oil Refining Corp. (F. I. Louis and others) to test acreage of the Highway.

The well ran very low with respect to the Barnsdall well. Barnsdall got top Viola at 4,114 feet and drilled to total depth of 4,149 feet, where it is still shut down in the Viola. Independent got the top of the Viola at 4,188 feet, but there is a difference in elevation of 52 feet, the Barnsdall well having elevation of 932 feet and the Independent 880 feet. Thus, there is a difference of 126 feet in favor of the Barnsdall well, whatever that is worth. In the Seminole territory it isn't always worth something.

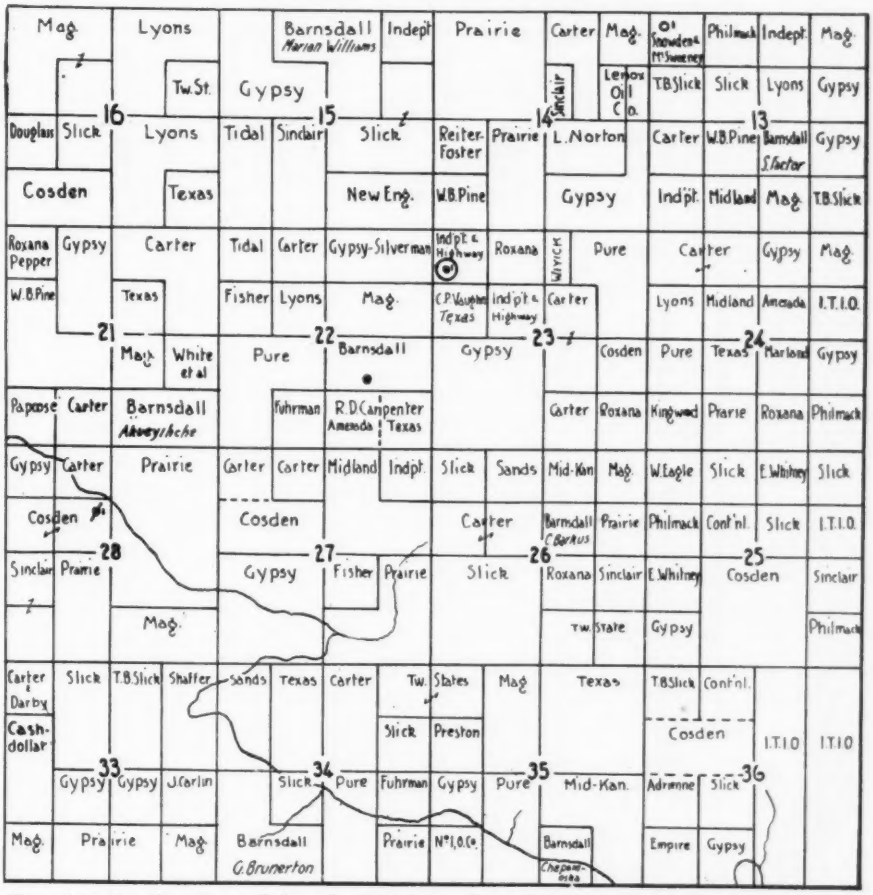
The Independent well went into the Simpson formation, in which zone the Wilcox pay is found at 4,264 feet. It found oil in this formation and made one flow of 120 barrels early in the week. It drilled ahead, getting the top of the Wilcox at 4,323 feet and was drilled in one foot when it made its big flow.

A meeting was hastily called by Umpire Ray M. Collins on Saturday morning—the well came in on Friday. It was then decided that nothing more will be started around the well. Gypsy Oil Co., The Texas Co. and Magnolia Petroleum Co. have the offsets. Independent agreed to pinch in its well to 100 barrels per day, starting at once, the other operators will pay royalties based on the Independent well's production, and everything will be lovely. Furthermore, not to be outdone in the matter of helping keep down production, Barnsdall agreed to let sleeping dogs lie in its Sec. 22 test.

At this meeting there was some more business. The Gypsy Oil Co. brought in the other new pool, or extension to pool, whichever it turns out to be. It is in the SE NE of 7-8-6, and is one and one-half miles west and a half mile north of the west edge of the Bowlegs pool. Top of the Wilcox was 4,455 feet and it

(*Continued on Page* 44)

## Part of T. 7, R. 6 Country, Seminole County, Okla.

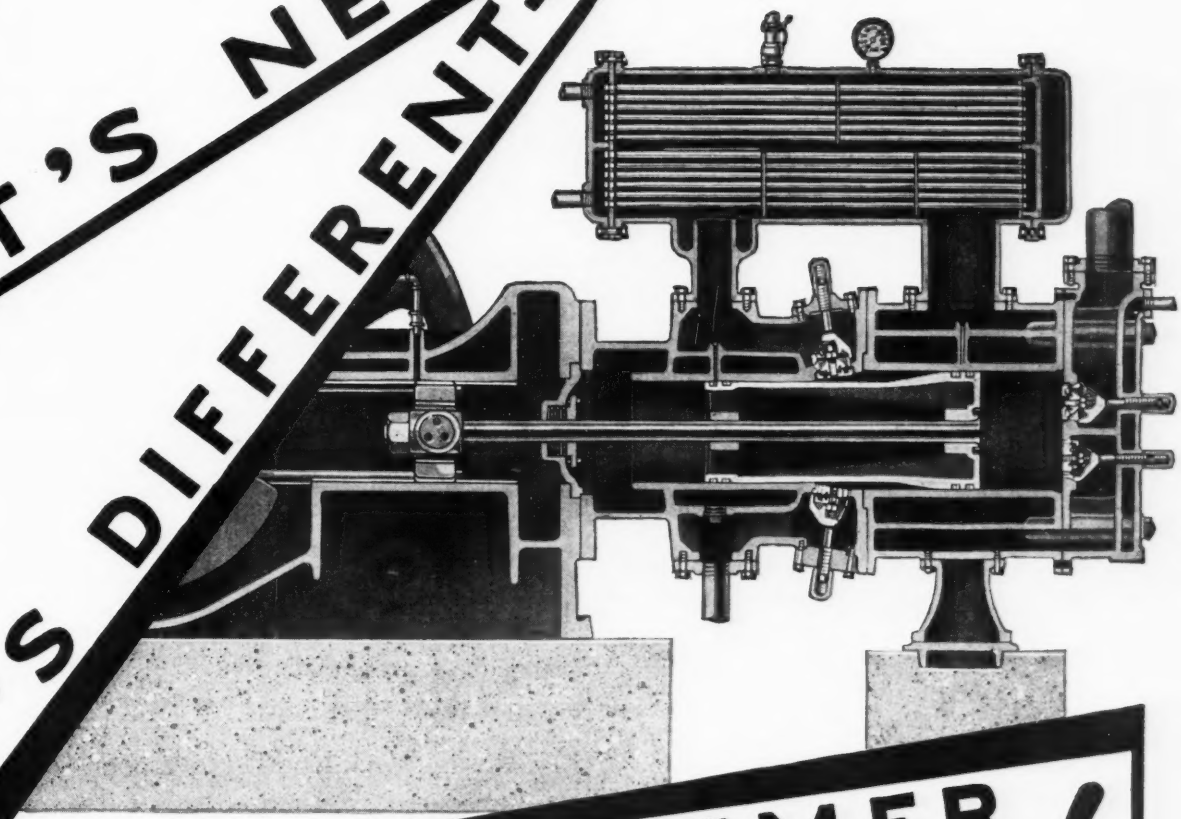



*Map shows location of new Independent Oil & Gas Co. well in Sec. 23. The Little River pool is north and east of this about three miles, the southern part of it lying in Secs. 1 and 2, of 7-6. Southwest of the Independent well, Barnsdall is shut down in the Viola lime with a showing of oil and northeast the Snowden & McSweeney well has standardized at 3,900 feet. The dry hole in Sec. 28 is a Wilcox failure*

# Seminole District Production by Companies and Leases, November 4 and October 28, 1927

| Company | Farm | S.T.R. | November 4th No. Wells | November 4th Prod. | October 28th No. Wells | October 28th Prod. |
|---|---|---|---|---|---|---|
| **BOWLEGS** | | | | | | |
| Amerada | Rascoe | 15- 8-6 | 8 | 4,390 | 8 | 4,600 |
| Atlantic | Baker | 1- 8-6 | 4 | 1,447 | 4 | 1,552 |
| Atlantic | Fleet | 23- 8-6 | 4 | 1,316 | 4 | 1,380 |
| Atlantic | Grayson | 12- 8-6 | 2 | 1,698 | 2 | 1,821 |
| Atlantic | A. Jones | 10- 8-6 | 3 | 178 | 3 | 198 |
| Atlantic | C. Jones | 9- 8-6 | 2 | 343 | 2 | 971 |
| Total Atlantic | | | 15 | 4,982 | 15 | 5,922 |
| Barnsdall | McNac | 28- 8-6 | 1 | 40 | 1 | 40 |
| Barnsdall | Murrow | 11- 8-6 | 4 | 1,590 | 4 | 1,264 |
| Total Barnsdall | | | 5 | 1,630 | 5 | 1,304 |
| Carter | Bowlegs | 15- 8-6 | 3 | 1,560 | 3 | 1,575 |
| Carter | Burden | 23- 8-6 | 2 | 470 | 2 | 565 |
| Carter | Jones | 11- 8-6 | 3 | 5,050 | 3 | 2,380 |
| Carter | Harjoche | 15- 8-6 | 6 | 1,110 | 6 | 1,345 |
| Carter | Hilly | 23- 8-6 | 1 | 1,075 | 1 | 1,140 |
| Carter | Walker | 15- 8-6 | 2 | 615 | 2 | 540 |
| Carter | Wise | 23- 8-6 | 12 | 5,635 | 12 | 8,275 |
| Total Carter | | | 29 | 15,515 | 29 | 15,820 |
| Empire | Lacey | 15- 8-6 | 6 | 973 | 6 | 960 |
| Empire | Wise | 23- 8-6 | 2 | 1,240 | 2 | 1,500 |
| Total Empire | | | 8 | 2,212 | 8 | 2,460 |
| Gypsy | Bowlegs | 22- 8-6 | 1 | 345 | 1 | 270 |
| Gypsy | Brown | 33- 8-6 | 1 | 100 | 1 | 100 |
| Gypsy | Cumsey | 8- 8-6 | 4 | 687 | 4 | 1,420 |
| Gypsy | Grayson | 13- 8-6 | 4 | 2,627 | 4 | 1,225 |
| Gypsy | Jones | 11- 8-6 | 1 | 545 | 0 | 0 |
| Gypsy | Walker | 15- 8-6 | 8 | 3,178 | 8 | 3,047 |
| Gypsy | Wise | 23- 8-6 | 3 | 292 | 3 | 245 |
| Total Gypsy | | | 22 | 7,774 | 21 | 6,407 |
| Independent et al | Coker | 21- 8-6 | 1 | 144 | 1 | 145 |
| I. T. I. O. | Barnett | 24- 8-6 | 2 | 915 | 2 | 856 |
| I. T. I. O. | Billington | 22- 8-6 | 5 | 1,102 | 4 | 1,066 |
| I. T. I. O. | Bowlegs | 22- 8-6 | 11 | 1,767 | 11 | 1,993 |
| I. T. I. O. | Davis | 13- 8-6 | 4 | 4,234 | 4 | 1,394 |
| I. T. I. O. | Fay | 18- 8-6 | 6 | 5,575 | 5 | 6,300 |
| I. T. I. O. | Goforth | 15- 8-6 | 11 | 2,211 | 11 | 1,940 |
| I. T. I. O. | Hull | 26- 8-6 | 1 | 258 | 1 | 317 |
| I. T. I. O. | Livingston | 15- 8-6 | 11 | 6,687 | 11 | 6,956 |
| I. T. I. O. | Lizzie | 11- 8-6 | 2 | 409 | 2 | 473 |
| I. T. I. O. | Walker | 15- 8-6 | 8 | 1,705 | 8 | 1,562 |
| I. T. I. O. | Wilmont | 15- 8-6 | 4 | 1,999 | 4 | 2,048 |
| I. T. I. O. | Youngblood | 22- 8-6 | 2 | 591 | 2 | 608 |
| Total I. T. I. O. | | | 63 | 27,453 | 64 | 25,413 |
| McCulloch | Bowlegs | 22- 8-6 | 3 | 295 | 3 | 215 |
| Magnolia | Hammond | 10- 8-6 | 2 | 272 | 2 | 24 |
| Magnolia | Davis | 13- 8-6 | 1 | 900 | 0 | 0 |
| Mid-Continent | Baker | 10- 8-6 | 4 | 2,940 | 4 | 3,175 |
| Mid-Continent | Bowlegs | 22- 8-6 | 1 | 395 | 1 | 560 |
| Mid-Continent | Smith | 12- 8-6 | 1 | 75 | 0 | 0 |
| Total Mid-Continent | | | 6 | 3,412 | 5 | 3,740 |
| Minnehoma | Bowlegs | 15- 8-6 | 4 | 300 | 4 | 271 |
| Prairie | Gahagan | 23- 8-6 | 4 | 650 | 4 | 730 |
| Prairie | Harber | 10- 8-6 | 7 | 3,220 | 7 | 3,335 |
| Prairie | Jones | 11- 8-6 | 2 | 1,990 | 2 | 2,155 |
| Prairie | Templeton | 12- 8-6 | 4 | 5,120 | 1 | 2,205 |
| Prairie | Whitney | 23- 8-6 | 4 | 100 | 4 | 230 |
| Total Prairie | | | 21 | 11,080 | 18 | 8,655 |
| Pure | Reed | 14- 8-6 | 15 | 7,055 | 16 | 7,297 |
| Pure | D. Strother | 14- 8-6 | 3 | 980 | 3 | 1,029 |
| Pure | F. Strother | 10- 8-6 | 1 | 580 | 1 | 601 |
| Total Pure | | | 19 | 8,615 | 20 | 8,927 |
| Roxana et al | Taylor | 16- 8-6 | 6 | 2,049 | 6 | 2,063 |
| Shaffer | Lacey | 14- 8-6 | 3 | 807 | 3 | 597 |
| Sinclair | Bowlegs | 22- 8-6 | 1 | 90 | 1 | 120 |
| Sinclair | Cumsey | 10- 8-6 | 2 | 3,305 | 2 | 3,875 |
| Sinclair | Ellen | 11- 8-6 | 6 | 3,876 | 6 | 4,000 |
| Sinclair | Harjo | 14- 8-6 | 3 | 1,775 | 3 | 1,830 |
| Sinclair | Jones | 8- 8-6 | 4 | 7,125 | 4 | 7,205 |
| Sinclair | Taylor | 10- 8-6 | 4 | 3,315 | 4 | 3,360 |
| Sinclair | Walker | 22- 8-6 | 4 | 1,450 | 4 | 1,250 |
| Total Sinclair | | | 24 | 20,936 | 24 | 21,640 |
| Texas | Reed | 14- 8-6 | 9 | 7,007 | 9 | 7,230 |
| Tidal | Grayson | 13- 8-6 | 3 | 1,620 | 3 | 1,400 |
| Tidal | Harjoche | 10- 8-6 | 5 | 2,335 | 5 | 2,010 |
| Total Tidal | | | 8 | 3,955 | 8 | 3,410 |
| Twin State | Jones | 11- 8-6 | 2 | 690 | 2 | 1,030 |
| TOTAL BOWLEGS | | | 268 | 124,419 | 261 | 119,953 |
| **LITTLE RIVER** | | | | | | |
| Amerada | Fore | 35- 8-6 | 1 | 1,035 | 1 | 1,350 |
| Amerada | Nitey | 35- 8-6 | 3 | 2,920 | 3 | 2,580 |
| Total Amerada | | | 4 | 3,955 | 4 | 3,930 |
| Blackwell | Nitey | 35- 8-6 | 7 | 5,911 | 7 | 6,372 |
| Carter | Fish | 1- 7-6 | 1 | 905 | 1 | 1,060 |
| Continental | Cozar | 2- 7-6 | 1 | 1,250 | 1 | 1,540 |
| Gypsy | Campbell | 36- 8-6 | 2 | 1,510 | 2 | 2,207 |
| Gypsy | Nungee | 1- 8-6 | 1 | 15 | 1 | 80 |
| Gypsy | Pottey | 35- 8-6 | 1 | 1,352 | 1 | 1,820 |
| Total Gypsy | | | 4 | 2,877 | 5 | 4,137 |
| Independent | Harris | 23- 7-6 | 1 | 78 | 0 | 0 |
| I. T. I. O. | Dungan | 35- 8-6 | 3 | 3,609 | 3 | 4,132 |
| I. T. I. O. WE | House-A | 1- 7-6 | 1 | 130 | 1 | 0 |
| I. T. I. O. WE | House-B | 2- 7-6 | 3 | 3,240 | 2 | 2,485 |
| I. T. I. O. MA | House | 1- 7-6 | 1 | 1,500 | 1 | 1,634 |
| I. T. I. O. | Jackson | 1- 7-6 | 3 | 3,884 | 3 | 4,139 |
| I. T. I. O. | McCulla | 1- 7-6 | 3 | 1,295 | 2 | 957 |
| I. T. I. O. | Nitey | 2- 7-6 | 5 | 4,026 | 3 | 4,283 |
| I. T. I. O. | Phoebe-A | 36- 8-6 | 1 | 979 | 1 | 762 |
| I. T. I. O. | Phoebe-B | 36- 8-6 | 2 | 1,425 | 0 | 0 |
| I. T. I. O. | Reed | 1- 7-6 | 1 | 694 | 1 | 1,139 |
| I. T. I. O. | Soketneche | 1- 7-6 | 4 | 1,215 | 3 | 627 |
| Total I. T. I. O. | | | 27 | 21,997 | 20 | 20,158 |
| Mid-Continent | Wadsworth | 36- 8-6 | 5 | 1,950 | 5 | 2,105 |
| Philmack | Davis | 1- 7-6 | 1 | 0 | 1 | 590 |
| P & R | Dungan | 35- 8-6 | 1 | 25 | 1 | 400 |
| P & R | House | 2- 7-6 | 3 | 4,185 | 3 | 2,565 |
| Total P & R | | | 4 | 4,210 | 4 | 2,965 |
| Roxana | Jimpsey | | 1 | 79 | 0 | 0 |
| Superior | Wadsworth | 1- 7-6 | 1 | 31 | 1 | 93 |
| Texas | Coker | 1- 7-6 | 2 | 870 | 1 | 180 |
| Tidal | House | 1- 7-6 | 2 | 2,230 | 2 | 2,500 |
| Tidal | Johnson | 1- 7-6 | 1 | 150 | 0 | 0 |
| TOTAL LITTLE RIVER | | | 63 | 46,469 | 54 | 45,630 |
| **EARLSBORO** | | | | | | |
| Amerada | Anderson | 15- 8-6 | 4 | 2,815 | 5 | 2,940 |
| Amerada | Cowden | 4- 9-5 | 8 | 2,350 | 7 | 2,295 |
| Amerada | Rodgers | 3- 9-5 | 2 | 2,375 | 2 | 2,635 |
| Total Amerada | | | 14 | 7,540 | 14 | 7,870 |
| Barnsdall | Brown | 10- 9-5 | 4 | 3,722 | 4 | 2,605 |
| Barnsdall | F. Bruner | 2- 9-5 | 1 | 949 | 1 | 615 |
| Barnsdall | N. Bruner | 11- 9-5 | 3 | 4,050 | 3 | 3,976 |
| Barnsdall | Cudjo | 11- 9-5 | 1 | 29 | 1 | 49 |
| Barnsdall | D-Davis | 11- 9-5 | 3 | 1,730 | 3 | 1,675 |
| Barnsdall | J-Davis | 11- 9-5 | 3 | 597 | 3 | 1,831 |
| Barnsdall | M-Davis | 11- 9-5 | 3 | 1,471 | 3 | 1,483 |
| Barnsdall | Gibson | 9- 9-5 | 6 | 3,125 | 6 | 3,740 |
| Barnsdall | Ingram | 4- 9-5 | 7 | 6,727 | 6 | 5,065 |
| Barnsdall | Pack | 10- 9-5 | 4 | 961 | 4 | 432 |
| Barnsdall | Peter | 10- 9-5 | 4 | 551 | 4 | 574 |
| Barnsdall | Sango | 2- 9-5 | 1 | 106 | 1 | 127 |
| Barnsdall | Sebolka | 15- 9-5 | 1 | 1,763 | 1 | 2,102 |
| Barnsdall | H-Sullivan | 11- 9-5 | 2 | 1,130 | 2 | 1,073 |
| Barnsdall | Sullivan | 10- 9-5 | 3 | 40 | 2 | 52 |
| Barnsdall | Watsutke | 12- 9-5 | 3 | 1,288 | 3 | 1,708 |
| Total Barnsdall | | | 48 | 28,239 | 48 | 27,111 |
| Carter | Davis | 13- 9-5 | 1 | 1,725 | 1 | 630 |
| Carter | Payne | 12- 9-5 | 2 | 1,070 | 2 | 1,260 |
| Carter | Sango | 2- 9-5 | 3 | 6,445 | 3 | 2,805 |
| Total Carter | | | 6 | 9,240 | 6 | 4,695 |
| Continental | Kays | 2- 9-5 | 2 | 2,200 | 2 | 1,995 |
| Continental | Spencer | 12- 9-5 | 4 | 5,255 | 4 | 8,220 |
| Total Continental | | | 6 | 7,455 | 6 | 10,215 |
| Crosbie | Bryant | 9- 9-5 | 2 | 2,825 | 2 | 2,712 |
| Empire | Edmundson | 3- 9-5 | 3 | 2,623 | 3 | 2,866 |
| Gypsy | Bruner | 10- 9-5 | 4 | 7,260 | 4 | 3,145 |
| Gypsy | Carter | 11- 9-5 | 9 | 4,277 | 9 | 3,712 |
| Gypsy | Hunick | 5- 9-5 | 1 | 670 | 1 | 767 |
| Gypsy | McFarland | 9- 9-5 | 1 | 22 | 0 | 0 |
| Gypsy | Noble | 12- 9-5 | 4 | 7,820 | 4 | 11,305 |
| Gypsy | Peter | 10- 9-5 | 6 | 1,127 | 6 | 1,222 |
| Gypsy | State | 16- 9-5 | 4 | 490 | 4 | 517 |
| Gypsy | Sango | 1- 9-5 | 2 | 1,347 | 2 | 1,770 |
| Total Gypsy | | | 31 | 23,015 | 30 | 22,440 |
| Independent | Bruner | 10- 9-5 | 4 | 2,832 | 4 | 4,455 |
| Independent | Gaines | 11- 9-5 | 2 | 9,395 | 2 | 7,915 |
| Independent | Knappen | 8- 8-5 | 5 | 3,875 | 5 | 3,185 |
| Independent | O'Dell | 4- 9-5 | 4 | 885 | 4 | 775 |
| Independent | Sullivan | 10- 9-5 | 4 | 145 | 4 | 283 |
| Total Independent | | | 19 | 17,132 | 19 | 16,613 |
| Magnolia | Bryant | 9- 9-5 | 5 | 2,233 | 4 | 1,842 |
| Magnolia | Cowden | 4- 9-5 | 3 | 100 | 2 | 213 |
| Magnolia | Edmundson | 3- 9-5 | 2 | 904 | 2 | 436 |
| Magnolia | Holmsley | 11- 9-5 | 6 | 3,580 | 6 | 3,766 |
| Magnolia | Ingram | 10- 9-5 | 1 | 36 | 1 | 37 |
| Magnolia | Lena | 10- 9-5 | 3 | 271 | 3 | 354 |
| Magnolia | Seay | 12- 9-5 | 5 | 3,033 | 4 | 3,335 |
| Magnolia | Simpson | 10- 9-5 | 4 | 598 | 4 | 815 |
| Magnolia | Sparks | 11- 9-5 | 7 | 2,436 | 7 | 3,876 |
| Magnolia | Sullivan | 12- 9-5 | 2 | 2,537 | 2 | 2,747 |
| Total Magnolia | | | 38 | 15,728 | 35 | 17,422 |
| Mid-Continent | McCumber | 9- 9-5 | 7 | 1,055 | 7 | 1,340 |
| Mid-Kansas | Anderson | 14- 9-5 | 3 | 750 | 3 | 730 |
| Phillips | Dunnaway | 15- 9-5 | 1 | 30 | 1 | 16 |
| Phillips | Graham | 9- 9-5 | 7 | 702 | 6 | 745 |
| Total Phillips | | | 8 | 732 | 7 | 761 |
| Prairie | Baker | 23- 9-5 | 1 | 45 | 1 | 50 |
| Prairie | Davis | 13- 9-6 | 4 | 1,890 | 4 | 1,005 |
| Prairie | C-Graham | 3- 9-5 | 2 | 760 | 2 | 820 |
| Prairie | O-Graham | 10- 9-5 | 4 | 1,955 | 4 | 4,235 |
| Prairie | Stidham | 11- 9-5 | 13 | 6,965 | 13 | 8,155 |
| Total Prairie | | | 24 | 11,615 | 24 | 14,265 |
| Roxana | Bayliss | 17- 9-5 | 1 | 12 | 1 | 17 |
| Roxana | Spencer | 12- 9-5 | 2 | 1,185 | 2 | 866 |
| Total Roxana | | | 3 | 1,197 | 3 | 883 |
| Shaffer | Clark | 1- 9-5 | 2 | 321 | 2 | 48 |
| Sinclair | Foreman | 18- 9-5 | 1 | 18 | 1 | 15 |
| Sinclair | Hollins | 12- 9-5 | 3 | 1,600 | 3 | 1,294 |
| Sinclair | Sango | 2- 9-5 | 1 | 2,865 | 0 | 0 |
| Total Sinclair | | | 5 | 4,483 | 4 | 1,309 |
| Skelly | Spencer | 12- 9-5 | 2 | 3,020 | 2 | 3,565 |
| Texas | Anderson | 2- 9-5 | 1 | 425 | 1 | 131 |
| Texas | Brown | 10- 9-5 | 4 | 1,850 | 4 | 1,500 |
| Texas | Rodgers | 5- 9-5 | 3 | 6,580 | 2 | 7,260 |
| Texas | Wilmont | 10- 9-5 | 5 | 3,525 | 5 | 935 |
| Total Texas | | | 13 | 12,380 | 12 | 9,826 |
| Tidal | Watkins | 9- 9-5 | 5 | 2,550 | 4 | 1,815 |
| Twin State | Baker | 12- 9-5 | 4 | 1,092 | 4 | 500 |
| Twin State | Hearn | 2- 9-5 | 1 | 2,665 | 2 | 1,765 |
| Total Twin State | | | 5 | 3,757 | 6 | 2,265 |
| TOTAL EARLSBORO | | | 250 | 154,369 | 243 | 148,490 |
| TOTAL LITTLE RIVER | | | 63 | 46,469 | 54 | 45,630 |
| TOTAL SEARIGHT | | | 59 | 25,548 | 59 | 26,454 |
| TOTAL BOWLEGS | | | 268 | 124,419 | 261 | 119,953 |
| TOTAL SEMINOLE | | | 325 | 64,577 | 331 | 64,333 |
| GRAND TOTAL SEMINOLE DISTRICT | | | 965 | 416,382 | 948 | 404,860 |
| Avg. Per Well | | | | 431 | | 427 |

# IT'S NEW—
# IT'S DIFFERENT—
# IT'S A BESSEMER!



THE NEW Bessemer SA-2 Compressor Cylinder is an innovation in compressor design. It is a Single Acting Two Stage Cylinder which combines both low and high stages in *one* cylinder. It is compact, accessible and highly efficient, and heralds new high standards of performance, even for a Bessemer.

Many of the features of the Bessemer V.H. cylinders have been incorporated —such as valves, method of fastening valves, style of head for low pressure cylinder and cooling system—but the arrangement of cylinders and piston is unique in compressor design.

Both high and low stages are single acting. Compression takes place in the low stage on the outward stroke of the piston and in the high stage on the inward stroke. The load on each stroke is equalized by properly proportioning the two areas to suit the operating conditions.

The new Bessemer SA-2 cylinder is the latest development in compressor building. Its simplicity will arouse instant interest; its ruggedness will be readily apparent; and its exclusive features which minimize maintenance will win a hearty welcome.

Write for bulletin describing its principle of operation and outstanding features.

THE BESSEMER GAS ENGINE COMPANY
70 York Street ∴ ∴ Grove City, Pa.

## Completions in N. E. Central, West, Panhandle and North Texas, Week Ended November 4, 1927

### NORTH AND EAST CENTRAL TEXAS

| Company | Well / Farm | Location / Survey | Depth | Init. Prod. |
|---|---|---|---|---|
| **Brown County** | | | | |
| Humble | 22-Hickman | Benson | 1203-1224 | 444 |
| Cranfill et al | 10-Smith | SA&MG | 1340-1348 | 50 |
| Cranfill et al | 16-Smith | SA&MG | 1336-1362 | 800 |
| Forrest | 3-Moore | SA&MG | 1250-1280 | 150 |
| Humble | 4-Gilbreth | SA&MG | 1305-1313 | 738 |
| Phillips | 6-Newsome | Presslar | 1325-1340 | 115 |
| Roxana | 16-Smith | SA&MG | 1330-1346 | 67 |
| Smith | 2-Moore | DeBord | 1272-1290 | 100 |
| Cameron et al | 1-King | Williams | T.D. 1502 | Dry |
| Daniels et al | 1-George | BS&F | T.D. 1425 | Dry |
| Shell | 1-Earp | Brown | T.D. 2120 | Dry |
| **Callahan County** | | | | |
| Denny-Andrews | 1-Beck | Dantham | T.D. 1115 | Dry |
| Sterling | 1-Hatchett | D&DA | T.D. 840 | Dry |
| Reid et al | 1-Kelton | BBB&C | T.D. 720 | Dry |
| Ross | 1-Moore | SP | T.D. 1952 | Dry |
| Shadbolt et al | 1-Hall | Robinson | T.D. 1000 | Dry |
| Turley | 1-Hickman | Jones | 467-495 | 2 |
| **Coleman County** | | | | |
| Hoffer | 2-Cameron | Cleveland | T.D. 2374 | Dry |
| **Eastland County** | | | | |
| Independent | 1-Poe | H&TC | T.D. 3589 | Dry |
| Lewis et al | 4-Hargus | ET | 1374-1504 | 2M |
| Belva | 1-Good | Stubblefield | 3690-3698 | 1184 |
| **Limestone County** | | | | |
| Why Not Oil Co. | 2-Lewis | Varella | 2896-2891 | 160 |
| **Palo Pinto County** | | | | |
| Hughes | 1-Anderson | T&P | T.D. 820 | Dry |
| **Stephens County** | | | | |
| Red Bank | 1-Robertson | Martin | T.D. 4731 | Dry |
| **Young County** | | | | |
| Cosden | 1-Smith | Decker | T.D. 4860 | Dry |

### NORTH TEXAS

| Company | Well / Farm | Location / Survey | Depth | Init. Prod. |
|---|---|---|---|---|
| **Archer County** | | | | |
| Conso dated et al | 4-Netherton | ATNC | 1553-1557 | 180 |
| Grisham | 1-Farmer | NAR | 1521-1522 | 30 |
| Brown et al | 1-Wallace | DCSL | T.D. 1712 | Dry |
| Panhandle | 1-Helm | Harris | T.D. 1560 | Dry |
| Hines et al | 1-Garvey | Harris | T.D. 1600 | Dry |
| Burnes et al | 1-Harris | Harris | T.D. 1400 | Dry |
| **Cooke County** | | | | |
| Kewanee | 2-Dennis | McClyman | T.D. 2526 | Dry |
| Fain et al | 1-Davidson | Davis | T.D. 2035 | Dry |
| Continental | 1-Koelzer | Scott | 1378-1395 | 35 |
| Hedrick Camp et al | 1-Bayers | Barnett | 1647-1669 | 15 |
| **Wilbarger County** | | | | |
| Phillips | 8-Waggoner | H&TC | 2424-2430 | 35 |
| Smith et al | 1-Waggoner | H&TC | 2301-2314 | 75 |
| **Wichita County** | | | | |
| Cline | 1-Goetze | GC&SF | T.D. 893 | Dry |
| Rayzor et al | 1-James | H&TC | T.D. 2005 | Dry |
| Moore | 2-Crudup | DCSL | T.D. 833 | Dry |
| Duncan et al | 1-American Ref. Co. | DCSL | T.D. 1445 | Dry |
| **Young County** | | | | |
| Clark et al | 1-Howell | TE&L | 827-882 | 18 |

### PANHANDLE

| Company | Well / Farm | Location / Survey | Depth | Init. Prod. |
|---|---|---|---|---|
| **Carson County** | | | | |
| Texas | 4-Boney | I&GN | 3128-3179 | 320 |
| **Gray County** | | | | |
| Foster et al | 1-Colebank | I&GN | 2429-2803 | 25 |
| Amos et al | 1-Cross | H&GN | 2718-2815 | 8 |
| **Hartley County** | | | | |
| McKenna | 1-Shelton | Capital | T.D. 3595 | Dry |
| **Hutchinson County** | | | | |
| Phillips | 1-Benford | H&TC | 2982-2995 | 240 |
| Phillips | 28-Whittemburg | M&C | 2903-2927 | 50 |
| **Wheeler County** | | | | |
| Marland | 2-Bentley | H&GN | 2296-2297 | 28 |

### WEST TEXAS

| Company | Well / Farm | Location / Survey | Depth | Init. Prod. |
|---|---|---|---|---|
| **Crane County** | | | | |
| Simms et al | 9-Univ. | Univ. | 2810-2943 | 400 |
| Marland | 1-Cordova | H&TC U | T.D. 2261 | Dry |
| **Crockett County** | | | | |
| Gulf | 2-Powell | GC&SF | 2590-2607 | 250 |
| **Howard County** | | | | |
| Sweeney et al | 2-Chalk | W&NW | 1634-1651 | 75 |
| **Pecos County** | | | | |
| Marland et al | 5-Yates | T&C | 1530-1695 | 164 |
| Mazda et al | 1-Smith | GC&SF | 1455-1600 | 600 |
| California | 3-Yates | GC&SF | 1060-1205 | 600 |
| California | 4-Yates | GC&SF | 1020-1072 | 678 |
| California | 5-Yates | GC&SF | 1060-1065 | 768 |
| Shankel et al | 1-Yates | L&GN | T.D. 1490 | Dry |
| **Upton County** | | | | |
| Humble | 7-Ricker | Denton | 2370-2498 | 225 |

## Completions in North Louisiana and Arkansas, Week Ended November 4, 1927

| Completions | Well | Location | Depth | Yield |
|---|---|---|---|---|
| **Bossier Parish—Cartersville** | | | | |
| Northwest La. Gas Co. | Mays No. 1 | 22-23-12 | 3091 | 10M gas |
| Texas Company | Wilkerson No. 1 | 36-23-12 | 3073 | 23M gas |
| **Caddo Parish—Pine Island** | | | | |
| Bethany O. & G. Co. | Offenhauser No. 1 | 1-20-16 | 2260 | 15 bbls. |
| Haynes Brothers | Murray No. 2 | 14-21-15 | 3920 | 400 bbls. |
| Standard Oil Co. of La. | Helpman No. 53 | 16-21-16 | 1922 | salt water abnd. |
| Texas Company | J. F. Herndon No. 8 | 14-21-15 | 3665 | 500 bbls. |
| Texas Company | J. F. Herndon No. 9 | 14-21-15 | 3585 | 15M gas |
| **Bossier Parish—Bellevue** | | | | |
| Jensen et al | Hale & Rumbough No. 1 | 17-18-11 | 1257 | salt water, abnd. |
| **Natchitoches Parish** | | | | |
| Lawson & Pharris | Clark & Morse Lbr. Co. No. 3 | Co. 25-5-6W | 1562 | dry, abnd. |
| **Richland Parish** | | | | |
| Texas-La. Carbon Blk. Co. | Boughton No. 1 | 1-15-6 | 2910 | junked, abnd. |
| **Urania—La Salle Parish** | | | | |
| Elbert Pet. Co. | Urania No. 5 | 7-10-2E | 1524 | 75 bbls. |
| **White Sulphur—LaSalle Parish** | | | | |
| Tunica Pet. Co. | L. & A. No. 40 | 15-7-2E | 1042 | dry, abnd. |
| Tunica Pet. Co. | L. & A. No. 41 | 5-7-2E | 757 | dry, abnd. |

| Completions | Well | Location | Depth | Yield |
|---|---|---|---|---|
| **Waskom-Harrison Co., East Texas** | | | | |
| Cox et al | O. L. Abney No. 1 | J. Short HRS | 990 | 5M gas |
| Tylong O. & G. Co. | Timmons No. 2 | Anderson HRS | 947 | 4M gas |
| **Panola County, Texas** | | | | |
| Bethany O. & G. Co. | Richardson No. 1 | Yarrell HRS | 988 | 5M gas |
| Bethany O. & G. Co. | Burns No. 2 | Birdson HRS | 1002 | 5M gas |
| **ARKANSAS—Smackover** | | | | |
| F. A. Book | Johnette No. 3 | 33-15-16 | 2280 | salt water, abnd. |
| Owenwood Corpn. | Snyder No. 4 | 34-15-15 | 2005 | junked, abnd. |
| Smitherman & McDonald | Saxon A-2 | 32-15-16 | 2253 | 15 bbls. |
| J. J. O'Brien | C. L. Saxon No. 1 | 16-16-16 | 2658 | salt water, abnd. |
| **Ashley County** | | | | |
| A. C. Glassell | Keller No. 1 | 10-19-5 | 3116 | dry, abnd |

(*Continued from Page* 41)

was drilled in one foot, where it started flowing 90 barrels per hour. The Gypsy, which is noted of late for bottling up its production, will shut this one to 100 barrels per day and will start nothing more. The Gypsy owns two of the offset locations and the third, diagonally southeast, has already been drilled. It was drilled by the Amerada Petroleum Corp. in the NW NW SW of 8-8-6, and finished a few days ahead of the Gypsy well, hole full of water at 4537 feet, two feet in the Wilcox. If the Gypsy hadn't been delayed by a fishing job in the Viola lime, there might have been the unusual spectacle of offset wells finishing at the same time, one dry and the other a big oil

## Drilling Operations in Oklahoma, Kansas and Texas, Week Ended November 5, 1927

| | November 5 — Week Ended — | | | | | October 29 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Loc. | Rigs | Drg. | S.D. | Total | Loc. | Rigs | Drg. | S.D. | Total |
| OKLAHOMA | | | | | | | | | | |
| Burbank | 1 | 2 | 9 | 5 | 17 | 1 | 3 | 8 | 6 | 18 |
| Other Osage | 9 | 11 | 12 | 8 | 40 | 11 | 11 | 14 | 6 | 42 |
| Bristow-Cushing | 5 | 4 | 33 | 7 | 49 | 3 | 2 | 32 | 8 | 45 |
| North Oklahoma | 11 | 15 | 55 | 43 | 124 | 13 | 11 | 54 | 45 | 123 |
| South Oklahoma | 11 | 20 | 115 | 34 | 180 | 5 | 13 | 118 | 33 | 169 |
| Muskogee | .. | 7 | 41 | 13 | 61 | .. | 4 | 33 | 18 | 55 |
| Okmulgee-Bristow | 8 | 30 | 69 | 15 | 122 | 7 | 35 | 60 | 19 | 121 |
| Tonkawa | .. | .. | 5 | 1 | 6 | .. | 1 | 3 | 2 | 6 |
| Seminole Dist | 19 | 20 | 332 | 33 | 404 | 23 | 20 | 253 | 35 | 431 |
| Total Oklahoma | 64 | 109 | 671 | 159 | 1,003 | 63 | 100 | 675 | 172 | 1,010 |
| KANSAS | 26 | 38 | 111 | 66 | 241 | 26 | 38 | 111 | 66 | 241 |
| TEXAS | | | | | | | | | | |
| Central | .. | 103 | 192 | 127 | 422 | .. | 103 | 190 | 138 | 431 |
| Panhandle | .. | 91 | 80 | 96 | 267 | .. | 93 | 68 | 103 | 264 |
| N. Central | .. | 46 | 82 | 32 | 160 | .. | 44 | 77 | 29 | 150 |
| West | .. | 153 | 170 | 117 | 440 | .. | 127 | 189 | 101 | 417 |
| Laredo | .. | 1 | 25 | 19 | 45 | .. | 1 | 25 | 19 | 45 |
| Total Texas | .. | 394 | 549 | 391 | 1,334 | .. | 368 | 549 | 390 | 1,307 |
| GRAND TOTAL | 90 | 543 | 1,355 | 645 | 2,633 | 89 | 506 | 1,335 | 628 | 2,737 |

# *Westcott & Greis Service fits your needs—Perfectly*

WHEN a Westcott & Greis Engineer is called in for consultation on measurement and control problems, his previous experience in solving such matters enables him to make intelligent, beneficial suggestions. His work in your plant, in no way, conflicts with your own engineering department, or their plans. On the contrary, he is glad to work with your own field and plant men; ready at all times to place himself at their disposal in quickly and economically settling questions pertaining to accurate measurement and absolute control of air, water, gas, steam and oil through his recommendations on equipment and their installation.

When a Westcott & Greis Engineer leaves your plant, he has left a job well done, behind him; he has, in most cases, accomplished an improvement in methods, that will result in distinct savings of time, labor and actual money. If you are facing a particularly knotty problem in your gasoline plant or refinery that calls for experienced advice, you are entitled to the service of a Westcott & Greis Engineer—placing you, of course, under no expense or obligation.

**WESTCOTT & GREIS, INC.**

*Dallas* *TULSA* *Los Angeles*

# Completions in Oklahoma and Kansas, Week Ended November 5, 1927

## OKLAHOMA

### Carter County

| Company | Well No. | Location | Depth | Init. Prod. |
|---|---|---|---|---|
| Schermerhorn et al | 3 | SEc NW 11-2-3 W | 3245-4323 | 145 |
| Magnolia | 5 | NEc NW SE 16-2-2 W | T.D. 1490 | Dry |
| Magnolia | 5 | SEc SW SE 16-2-2 W | T.D. 3606 | Dry |

### Creek County

| | | | | |
|---|---|---|---|---|
| Gled | 8 | SWc SE SW 13-19-8 E | T.D. 3130 | Dry |
| Lima | 1 | NEc 2-14-7 E | T.D. 2687 | Dry |
| Hemlock | 1 | CNL SW SW 35-18-10 E | T.D. 3006 | Dry |
| Irelan et al | 2 | NEc SE SE 9-17-11 E | T.D. 2555 | Dry |
| Clark et al | 1 | SEc NE SW 8-14-10 E | T.D. 3385 | Dry |
| King et al | 1 | CNL SW NW 5-18-11 E | 1765-1789 | 15 |
| McCulloch | 1 | NWc NE NE 22-18-11 E | 2005-2155 | 1M |
| Prod. & Ref. | 2 | SEc 23-18-11 E | 1892-1903 | 2½M |
| Avers et al | 1 | SWc SE SE 12-17-10 E | 1884-1915 | 50 |
| Future | 1 | NEc SE NW 2-16-11 E | 2641-2644 | 35 |
| Prairie | 1 | NEc NE SE 33-15-7 E | 2584-2620 | 140 |

### Garfield County

| | | | | |
|---|---|---|---|---|
| Skelly | 1 | SEc NW 19-23-3 W | 5451-5470 | 588 |
| Marland | 1 | NEc SW 19-23-3 W | 5305-5313 | 1432 |
| Marland | 1 | NWc SW 19-23-3 W | 4583-5244 OWD | 457 |

### Grady County

| | | | | |
|---|---|---|---|---|
| Stonger et al | 4 | NEc SE SW 35-5-8 W | T.D. 2400 | 66M |
| Twin State | 2 | NEc 14-4-8 W | T.D. 2390 | 27M |
| Carter | 2 | SEc SW SW 35-3-5 W | 1480-1503 OWD | 25 |
| Hammon et al | 2 | SWc NW NW 16-3-5 W | T.D. 2568 OWD | Dry |
| Amerada et al | 7 | SEc NE NE 21-3-5 W | T.D. 1729 | Dry |
| Carter | 2 | SEc SW SE 21-3-5 W | T.D. 2003 | Dry |

### Kay County

| | | | | |
|---|---|---|---|---|
| Vernon | 1 | NEc SE 19-29-1 E | T.D. 2355 | Dry |
| Palmer et al | 1 | SWc NE 26-26-2 W | T.D. 4518 | Dry |
| Stallings et al | 1 | NWc NE 3-28-4 E | T.D. 3699 | Dry |
| Vernon | 6 | NWc SW SE 17-29-1 E | 1470-1495 | 1½M |

### Lincoln County

| | | | | |
|---|---|---|---|---|
| Olean | 3 | SWc NE NE 36-15-7 E | 2440-2470 | 15 |

### McIntosh County

| | | | | |
|---|---|---|---|---|
| Sessions et al | 1 | NWc 20-12-15 E | T.D. 1320 | Dry |

### Muskogee County

| | | | | |
|---|---|---|---|---|
| Lange et al | 1 | SWc NE SW 20-15-18 E | T.D. 1475 | Dry |
| Slusher | 1 | C NW NE 34-14-17 E | T.D. 1872 | Dry |
| Henigman et al | 2 | SWc NW NW 7-14-19 E | T.D. 970 | Dry |
| Price | 2 | CWL SW SW 20-15-16 E | 1211-1222 | 10 |

### Okfuskee County

| | | | | |
|---|---|---|---|---|
| Champlin | 7 | SWc SE SE 15-11-11 E | 2673-2782 | 300 |
| Silcrease | 1 | CSL SE SE 17-10-9 E | 3215-3249 | 48M |

### Okmulgee County

| | | | | |
|---|---|---|---|---|
| Stout | 5 | CSL SW SW 20-16-14 E | 1729-1755 | 40 |
| Trout | 3 | SEc NW NW 28-13-14 E | 1935-1956 | 12 |
| Lambert | 2 | SWc NE 21-13-15 E | 1650-1652 | 1¼M |
| Peterson | 3 | C NW SW 0-15-14 E | 1741-1791 | 10M |
| Johnson | 1 | SWc NW NE 34-14-12 E | T.D. 2810 | Dry |
| Transcontinental | 2 | NWc SE SW 9-15-13 E | T.D. 2588 | Dry |
| Church et al | 1 | NEc SE 18-14-15 E | T.D. 2090 | Dry |
| Moffitt et al | 1 | NEc SE 5-11-13 E | T.D. 1120 | Dry |

### Osage County

| | | | | |
|---|---|---|---|---|
| Simons et al | 4 | SEc NW NW 31-29-12 E | 985-1022 | 6 |
| Kewanee | 6 | SEc NW NW 34-27-6 E | 2868-2945 | 300 |
| Osage | 381 | SWc NW SW 5-27-11 E | 1893-1917 | 1¼M |
| M&T | 4 | SEc SW SW 34-23-9 E | 1008-1036 | 30 |
| Okla. Nat'l | 775 | SEc SE 6-21-12 E | 1309-1351 | 1½M |

### Payne County

| | | | | |
|---|---|---|---|---|
| Shaffer | 1 | NEc NW 4-18-5 E | 2759-2772 | 5M |

### Pontotoc County

| | | | | |
|---|---|---|---|---|
| Gillette et al | 1 | NEc SW SW 25-5-6 E | 1630-1640 | 5 & 3M |
| Ramsey | 1 | SWc NW SE 17-5-8 E | 2377-2413 | 792 |
| McSweeney et al | 1 | SEc NE SW 15-5-8 E | T.D. 2660 | Dry |

### Pottawatomie County

| | | | | |
|---|---|---|---|---|
| Independent | 1 | SEc NE 5-9-5 E | T.D. 4380 | Dry |
| Texas | 5 | SWc SE SE 5-9-5 E | 4462-4477 | 1215 |
| Independent et al | 7 | NEc NW NE 8-9-5 E | 4366-4387 | 1030 |
| Magnolia | 1 | SEc NE SW 25-7-3 E | 4175-4184 | 390 |
| Magnolia | 1 | SEc SW SE 15-7-4 E | 3660-3708 | 500 |

### Seminole County

| | | | | |
|---|---|---|---|---|
| Barnsdall | 4 | SEc SW SW 1-9-5 E | 4311-4317 | 125 |
| Barnsdall | 5 | NEc SW SW 1-9-5 E | 4329-4341 | 471 |
| Barnsdall | 7 | NWc SW 1-9-5 E | 4351-4365 | 1193 |
| Gypsy | 2 | NWc SE NE 1-9-5 E | 4365-4369 | 40 |
| Gypsy | 3 | SWc SE SE 1-9-5 E | 4310-4322 | 1192 |
| Continental et al | 1 | SEc SW SW 2-9-5 E | 4470-4485 | 430 |
| Continental et al | 2 | SWc 2-9-5 E | 4276-4294 | 1950 |
| Barnsdall | 2 | NWc NE NW 10-9-5 E | 4289-4301 | 1188 |
| Gypsy | 5 | NWc SW 10-9-5 E | 4470-4485 | 140 |
| Barnsdall | 3 | NWc SW NW 11-9-5 E | 4306-4318 | 1248 |
| Gypsy | 4 | NWc NE 11-9-5 E | 4305-4317 | 705 |
| Magnolia | 7 | SEc NE SE 11-9-5 E | 4281-4290 | 360 |
| Magnolia | 1 | NWc 12-9-5 E | 4277-4285 | 379 |
| Mid-Kansas | 2 | SWc SE NE 25-9-6 E | 4225-4229 | 314 |
| Tidal | 3 | SEc NE SW 25-9-6 E | 4243-4259 | 130 |
| I. T. I. O. | 6 | NEc SE 26-9-6 E | 4301-4410 | 70 |
| Pure | 4 | NWc SW NW 36-9-6 E | 4074-4097 | 904 |
| Pure | 4 | SWc SE SW 11-8-6 E | 4128-4145 | 180 |
| Sinclair | 3 | SWc NE SW 11-8-6 E | 4579-4588 | 1008 |
| Sinclair | 7 | SEc NE SW 11-8-6 E | 4531-4594 | 522 |
| Gypsy | 3 | SEc NW NW 13-8-6 E | 4623-4659 | 217 |
| I. T. I. O. | 1 | NEc NW NE 22-8-6 E | 4665-4677 | 200 |
| I. T. I. O. | 2 | NEc NW SE 26-8-6 E | 4557-4566 | 366 |
| Carter | 1 | SWc NW SW 36-8-6 E | 4125-4135 | 1300 |
| Gypsy | 2 | NWc SE 36-8-6 E | 4290-4295 | 1545 |
| Independent | 2 | NEc SE SE 29-8-8 E | 3822-3945 OWD | 150 |
| Magnolia | 7 | NWc SE NW 32-8-8 E | 4165-4173 | 40 |
| I. T. I. O. | 2 | SWc SW NW 1-7-6 E | 4176-4181 | 2402 |
| Tidal | 2 | NWc NE NW 1-7-6 E | 4292-4300 | 1705 |
| Prairie | 2 | SWc NW SE 2-7-6 E | 4134-4147 | 140 |
| Empire | 4 | SWc NE SW 3-9-5 E | T.D. 4342 | Dry |
| Empire | 5 | NEc SE SW 3-9-5 E | T.D. 4456 | Dry |
| Independent et al | 3 | NWc NE NE 11-9-5 E | T.D. 4503 | Dry |
| Pure | 7 | NEc SW NW 36-9-6 E | T.D. 4172 | Dry |
| Phillips | 1 | NEc NE NW 3-8-6 E | T.D. 4322 | Dry |
| Roxana | 7 | NEc NW NE 16-8-6 E | T.D. 4368 | Dry |
| Prairie | 1 | SWc SW SE 11-8-6 E | T.D. 4375 | Dry |
| Prairie | 2 | SWc NW SE 11-8-6 E | T.D. 4486 | Dry |
| Prairie | 4 | NWc SW SE 11-8-6 E | T.D. 4510 | Dry |
| Prairie | 1 | NWc SE NE 18-8-6 E | T.D. 4434 | Dry |

### Stephens County

| | | | | |
|---|---|---|---|---|
| Hanbury | 5 | SWc NW SW 27-1-8 W | 2197-2214 | 25 |
| McAlester et al | 1 | SEc NW 34-1-8 W | 1715-1734 | 40 |

### Wagoner County

| | | | | |
|---|---|---|---|---|
| Williams | 5 | CNL SW NE 12-18-17 E | T.D. 287 | Dry |
| Knox-Shouse | 1 | C SE NW 10-17-16 W | T.D. 706 | Dry |

## KANSAS

### Butler County

| | | | | |
|---|---|---|---|---|
| Rosenthal et al | 7 | SEc NE SE 4-27-6 E | 3160-3168 | 200 |

### Cowley County

| | | | | |
|---|---|---|---|---|
| Ark. Fuel | 5 | NWc NE NW 7-32-5 E | 653-658 | 1M |
| Blue Stem | 2 | SWc SE 33-32-7 E | 1007-1018 | 5M |
| Barnsdall | 1 | SEc NE 7-33-3 E | 3479-3490 | 500 |
| Shawver et al | 1 | SEc SW 31-34-3 E | 1517-1533 | 2M |
| Tress | 1 | SEc NW 30-30-4 E | T.D. 3940 | Dry |
| Kitchell et al | 1 | NWc SE 8-33-5 E | T.D. 720 | Dry |

### Greenwood County

| | | | | |
|---|---|---|---|---|
| McCullough et al | 1 | SWc NW NW 29-22-13 E | T.D. 1960 | Dry |
| Rogers et al | 2 | Lot 9, Blk 44, 3-26-10 E | T.D. 1998 | Dry |
| B. G. & M. | 1 | SWc NW SE 26-27-8 E | T.D. 2906 | Dry |
| Prairie | 2 | NWc NE NW 15-22-12 E | T.D. 1803 | 25 |
| Christy et al | 2 | NWc SW 31-24-13 E | 1695-1721 | 50 |
| Bisagno et al | 1 | SEc SW 10-25-13 E | 1423-1460 | 100 |
| Wahn et al | 1 | Lot 4, Blk 44, 3-26-10 E | 1947-1977 | 50 |

### Russell County

| | | | | |
|---|---|---|---|---|
| Keys | 1 | SWc SE SE 32-13-15 W | 3046-3080 | 100 |
| Streeter et al | 1 | SEc NW 6-15-15 W | T.D. 3430 | Dry |

### Saline County

| | | | | |
|---|---|---|---|---|
| Thrall et al | 1 | SEc NE NW 15-15-4 W | T.D. 1170 | Dry |

### Sumner County

| | | | | |
|---|---|---|---|---|
| Jones et al | 1 | Lot 2, Blk 23, 11-32-2 E | T.D. 2188 | Dry |
| Roxana | 5 | NEc SW NE 25-31-2 E | 1850-1902 | 900 |
| Roxana | 5 | NWc SE NW 25-31-2 E | 1847-1899 | 150 |
| Roxana | 3 | Lot 6, Blk 35, 11-32-2 E | 2051-2120 | 500 |
| Ramsey et al | 1 | Lot 15, Blk 24, 11-32-2 E | 2116-2192 | 30 |
| Noble et al | 1 | Lot 6, Blk 32, 12-32-2 E | 2138-2162 | 30 |
| Midco | 1 | Lot 20, Blk 25, 12-32-2 E | 2132-2206 | 30 |
| Roxana | 2 | Tract 5, 14-32-2 E | 1966-2088 | 500 |
| Roxana | 1 | Blk 53, 14-32-2 E | 2010-2094 | 170 |
| Roxana | 2 | Tract 3, 14-32-2 E | 2005-2099 | 193 |
| Stanley et al | 1 | 14-32-2 E | 1994-2094 | 800 |

well.

The Amerada well would tend to keep the drilling in check there. There are other dry ones in the immediate area. Prairie Oil & Gas Co. drilled a failure in the NW SE NE of 18-8-6, three-fourths of a mile south of the Gypsy well, at 4,434 feet and less than three-fourths of a mile southeast of the Prairie failure, Magnolia Petroleum Co. got a hole full of water from the Wilcox at 4,427 feet, this being the SE SE NW of 17-8-6. Then, a mile and a half northeast, Gypsy has a failure in the SW SW NW of 4-8-6, total depth 4,690 feet. Thus, the area is quite spotted and may not be much of a pool, although there is room west for something.

The Gypsy well in 21-10-7 which aroused the fraternity a week ago by getting oil in the Cromwell sand, midway between the Searight and Cromwell pools, is drilling ahead slowly and making around 250 barrels each 24 hours. It is also making a small amount of water. In its present condition it is not calculated to start anything.

The third new pool in the Seminole district was opened on Saturday afternoon when the Mid-Continent Petroleum Corp., drilled its No. 1 Smith, in NW of NE of 5-7-7 into the Wilcox sand for an estimated production of 1,000 barrels per day. This well is two miles due east of production in the Little River pool. Sand was topped at 443 feet and was drilled in one foot.

Mid-Continent officials said Monday the well would be pinched to 100 barrels per day. Offset locations are owned by Lyons Petroleum Co., subsidiary of Producers and Refiners Corp., Roxana Petroleum Corp., and Senator W. B. Pine. Indications are that no new wells will be started now.

The Seminole district, after slumping under 400,000 barrels for the first time since last June, jumped again at the end of the week. It made 399.578 barrels on Tuesday, 391,436 on Wednesday, but by Thursday the effect of the sizeable shooting campaign now under way began to show and it went

to 403,405 barrels. On Friday it showed still more and went to 416,382 barrels. Saturday showed a decline to 413,717 barrels.

Some of the wells that were shot showed as follows:

Carter Oil Co.'s No. 1 Sango, 1-9-5, Earlsboro, was making 1,400 barrels and after shot jumped to 6,000.

Gypsy Oil Co.'s No. 2 Bruner, 10-9-5, Earlsboro, was down to small production, was shot with 10 quarts and jumped to 2,900 barrels. The No. 4 Bruner, on the same lease, was making 900 barrels daily and when shot with 10 quarts increased to 190 barrels per hour.

Barnsdall Oil Co.'s No. 3 Bruner, in 10-9-5, was making 800 barrels and after a 15-quart shot made 130 barrels per hour.

Twin State Oil Co.'s No. 1 Hearn, 2-9-5, was making 500 barrels and jumped to 135 barrels per hour after a 6-quart shot.

Prairie Oil & Gas Co.'s No. 4 Templeton, Bowlegs field, shot with 10 quarts and put on air, made 175 barrels per hour.

The Texas Co.'s No. 5 Wilmont, 10-9-5, after 15-quart shot made 150 barrels per hour.

Shooting is primarily responsible for the late increase in production and the field probably will hold above 400,000 barrels for a while. It is only temporary, however, and the decline will be still more precipitous when it again starts.

# Small Tract Jutting Into Pacific May Hold New Oil Pool

LOS ANGELES, Nov. 5

THE crude production curve in California has already hit low, and from now on its tendency will probably be upward. About the only thing that will hold back this increased production is a further shut-in movement. The state now has a total shut-in production of around 70,000 barrels, daily average.

Slightly more than 3000 barrels of daily average crude oil production at Ventura Avenue, has been pinched in within two weeks to conserve gas, along with about 27,000,000 cubic feet of gas. The pinched in crude was distributed as follows: Shell Co., 1900 barrels; Associated Oil Co., 600 barrels; General Petroleum, 400 barrels; and Pan American, 225 barrels.

The Pan American well drilling about 6 miles west of the Ventura Avenue at the edge of the Pacific, produced at over 1000 barrels a day this week, when the water shutoff was being tested. This tends to prove existence of a real oil field at what is known as Rincon. The Chanslor-Canfield-Midway Oil Co. holds extensive acreage in this vicinity and this company's two wells up on the hills from the ocean first showed existence of a real oil sand, but neither well has actually been placed on production.

The state permit tract of land jutting into the ocean was also held by CCMO, but after derrick had been erected, the development work was turned over to the Pan American. The hole was drilled to 3220 feet, and a string of 13⅜ inch cemented at 2782 feet. A plug was placed 10 feet below the shoe for the water shutoff test, which was found to be o. k., and late this week the plug was being drilled out.

Whether the well will be placed on production at present depth or drilled deeper is not known. The well produced oil of about 29 gravity, but the gas pressure was only about 50 pounds on the tubing. The plug held back most of the gas pressure.

The showing of the Pan American well brought about much activity and on Thursday night CCMO shipped out three rigs for new wells to be started at once. Along the ocean front there is a strip about 8500 feet in length and averaging 150 feet in width, owned by the Hobsons, who also owned most of the land in the Rincon area. This has been leased to California Petroleum for a bonus of $250,000 in addition to one-fourth royalty.

E. J. Miley interests will drill this strip for the California Petroleum and practically every well spotted here will call for at least one offset, and in about three instances offsets on the ocean side. Shell Co. will drill two or more wells in the general area, while Associated Oil will also drill, but not in the immediate future. General Petroleum also holds acreage and will drill.

The Rincon field may repeat the performance of Ventura Avenue, but it is very doubtful if the field will be as large in extent. In a portion of the new area, the drilling will be very deep. This has been proved by the deepest CCMO well, which showed oil sand around 7000 feet. But this well is higher up into the hills.

Activity at Long Beach has been revived, with indications that the deeper sand, which is expected to be found in a major portion of the old Signal Hill field, will bring about an increase in the production of that field over the next several months. A few predict that total production of the field will run around 150,000 barrels within six months.

The sand now being drilled to is found around 5300-5400 feet and the thickness is at least 400 feet in the wells already completed. About 50 wells are now either drilling or deepening for this sand. Within six weeks some 100 wells probably will be drilling. This means a big drilling campaign with no chance of holding back the operations. Seal Beach reported one completion the past week, with a steady decline in production.

## Water Trouble Discounted In Crane Co. Areas

HOUSTON, Nov. 5.—Operators in the University pool (Church & Fields) area of Crane county, west Texas, discount the importance of sulphur water encroachment on the east side of the field. Although water is intruding farther northwest to properties previously unaffected daily production has not been materially cut down. Only one well, No. 38, has been affected on the McElroy ranch property of the Gulf Production Co., which adjoins leases to the south in the University pool which have been affected.

Combined production of the University pool and the McElroy ranch field, which are structurally related, has been averaging between 125.000 and 135,000 barrels daily for weeks.

In the University pool area, a well of the Eastland Oil Co., & Collett, in the west half of the northwest quarter of sec. 47, is reported showing as high as 10 per cent water and b.s. Two Tidal wells on the "H" lease are showing some water, but this is nothing new, as they were originally drilled into the water and plugged back.

Two wells of Landreth Production Co., on the Cowden excess survey strip, are making sulphur water and other affected leases include the Simms Oil Co.'s University "C", the Magnolia's Hardwick, the Humble's University, in sec. 38, and the Gulf's State-Lassiter, in sec. 35.

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**The New-Way Motor Co., Lansing, Mich.,** has taken advantage of the recent successful flights of Lindbergh, Chamberlain and Byrd, to bring its New-Way air-cooled engine for general purposes to the attention of users of such equipment. The superiority of air-cooled motors in aircraft has caused this type of engine to be adopted almost universally by aeroplane manufacturers, because they are lower in weight per h. p.; have higher fuel economy, are dependable, durable and have lower maintenance costs.

The New-Way engine, the company claims, has reached new standards of efficiency in the 5 to 8 h. p. class. It is simple, compact and delivers more power per pound weight and the special patented air cooled cylinder eliminates water and its attendant troubles, and permits heavy duty service in any temperature, according to the company.

# Visiting Around the Refineries

By Paul Truesdell

National Petroleum News

### *One New Boiler Replaces Four Old Ones*

CANFIELD OIL CO., Cleveland, O., has recently put in operation a new boiler plant at its Cleveland refinery. The new installation consists of two Connelly water tube coal fired boilers, each rated at 412 horsepower. Since the new steam raising units were started up about a month ago, the old boiler house containing four return tubular boilers has been shut down and deserted. These boilers were rated at 125 horsepower each.

At present only one at a time of the new boilers is operated, the other standing by. One boiler carries the plant steam load easily and each is said to be capable of operating at 200 per cent rating for long periods. The boilers operate at 150 pounds pressure. They are fired by Westinghouse underfeed stokers and are equipped with forced and induced draft, Hagan automatic control and all the modern accessories.

J. A. Milliff is superintendent of the refinery which runs about 1200 barrels of crude a day, the crude being from the Mid-Continent field, bought from the Prairie Oil & Gas Co. and delivered through the pipe line.

### *Gerstenberger Starts Discussion*

THE superintendent of a department in a large refinery writes in to comment on an article by D. F. Gerstenberger in the August 17 issue of National Petroleum News page 69 entitled, "Cracking Plant is Best to Handle Crude Oil in Many Cases".

This correspondent, who does not wish his name used, says:

"The author (Gerstenberger) makes a positive statement as follows:

"'It were best that gas oil have an initial boiling point as near 500 degrees Fahr. as possible. The higher the initial the less the chance of vaporization in the tubes * * * * when used for cracking.' This has certainly not been the experience at our plant. Cross stills, for example, operating at maximum efficiency, should have a charging stock of around 38 to 42 per cent volatile at 500 degrees Fahr. and 58 to 62 per cent volatile at 540 degrees Fahr. in the Engler flask unless we are to shut down every 4 days for coke, which would be about our cycle with a 500 initial stock."

The commentator goes on to say:

"The author makes another positive statement that the gasoline produced from cracking gas oil is invariably higher in gravity than that produced from residues and crudes. This is a very interesting point and I am going to check up on it from our records. My personal opinion is, however, that Mr. Gerstenberger is in error and that the gravity of the gasoline produced from cracking gas oil and fuel oil with the same intermediate boiling points would vary only slightly. What variation there is I do not believe will be necessarily a higher gravity from gas oil as I believe the gravity is more dependent on type of still in which the cracking is done than on the stock charged to it."

These are interesting points and there is no way in which so much light can be thrown on a problem as by general discussion of it among men whose experience in meeting such problems has been extensive and varied. We would like to hear from others who have opinions on these phases of cracking.

### *Handling 130-Ton Cracking Drums*

H. H. HEWETSON, manufacturing manager of the Beacon Oil Co., Boston, in the September-October issue of "Colonial Beacon" gives a brief description of the new cracking reaction chambers or "soaking drums" that have been installed in the company's refinery at Everett, Mass.

These drums were forged from steel billets by the Bethlehem Steel Co. Each weighs about 260,000 pounds or 130 tons. Each drum is 6 feet in diameter by 50 feet long and the average wall thickness is 5 inches. The problem of erecting these enormous steel vessels, placing them on end on their settings is an exacting job. Mr. Hewetson says that special engines had to be bought to handle the work.

Mechanical Superintendent Killenger and the engineering department designed special steel structures for hoisting the drums into position and Azariah Mugford, chief rigger and his assistants, raised each drum into position without accident. Two of these drums have already been placed and more are to be put in, according to Mr. Hewetson.

### *What Refiners Are Thinking About*

IT IS usually easy to tell what problems or phases of the industry are uppermost in the minds of the refiners by the subjects that are picked for discussion at the refinery technology sessions of the American Petroleum Institute meeting. This year the chief subjects are to be "Pipe Still Distillation," by A. G. Peterkin of the Atlantic Refining Co.; "Recovery of Acid from Sludge," by Ralph A. Halloran of the Standard of California; "Vacuum Distillation," by Frank Howard of the Standard Development Co. (Standard of New Jersey); "Some Facts Concerning Vapor Phase Cracking," by Luis de Florez, consulting engineer, and "Improved Method for Treating Cracked Naphtha," also by Ralph Halloran.

### *New Process Working at Cabin Creek*

NOVEMBER issue of Pure Oil News states that a new process, called the Gyro process has been installed at the company's West Virginia refinery. Construction of new plant was completed about Oct. 1, it is stated, but after running a few days it was shut down. After minor changes and adjustments, the plant started up again Oct. 15.

O. B. Wendelln, resident chemist at the Cabin Creek refinery, has been placed in charge of Gyro process operation, being succeeded as plant chemist by G. N. Noble, with J. A. Thompson as assistant chemist.

# Volatility Test for Motor Oil Important In Present Driving, is Claimed

WEST BADEN, Ind., Nov. 7

CHANGES in motor oil requirements that present day automobiles are bringing were dwelt upon by H. C. Mougey, chief chemist, General Motors Research Corp., Detroit, in an address before the American Oil Men's Association, in convention here Nov. 2, 3 and 4.

He presented the point of view of the automobile engineer on lubrication—outlining conditions in present engine design and operation which the automobile people would like to have the oil industry furnish oils to meet.

The importance of a volatility test for motor oils is increasing with higher operating temperatures met with in present driving, due to improved roads and more powerful engines, Mr. Mougey told the oil men.

"An oil which is relatively nonvolatil will give more miles of lubrication than a more volatil oil under conditions where loss by evaporation is a factor," he said. "Such a difference in volatility would not show at lower operating temperatures."

IN ANSWER to questions after his paper, Mr. Mougey told of the importance of standard laboratory testing methods to determine volatility of motor oils and service tests to give data to be studied as to performance of oils in this regard.

Viscosity requirements are changing due to the increasing variance in temperature ranges motor oils must meet in use, he said. The same oil must lubricate in starting a car, perhaps at zero, and also at the higher temperatures met in very fast driving. Mr. Mougey said it was possible to get an oil which would be too heavy to lubricate in starting the car at around zero and also too light to lubricate satisfactorily at 210 Fahr.

Equipping cars with oil filters, crankcase ventilators, and controlling the jacket water temperature by shutters or thermostats has allowed the use of pre-diluted motor oils which meet operating conditions at various temperatures, he said.

"In the past regarded as a great evil, crankcase dilution, if kept within limits, is recognized as not only comparatively harmless, but in some cases is actually desirable," he said. The dirt and water in the oil were the real objectionable impurities and the engine equipped with crankcase dilution controls did not require the frequent draining to remove them that used to be considered necessary.

The principal portion of Mr. Mougey's address follows:

By

## H. C. Mougey

CRANKCASE dilution is an important cause for changes in oil viscosity. Unburned fuel, which escapes past the pistons and leaks into the crankcase, dilutes the oil and lowers its viscosity. In the case of a medium bodied automobile oil, a dilution of 10 per cent will decrease the viscosity to about half of its original value. Crankcase ventilators and control of the jacket water temperatures by shutters or thermostats will make it possible to hold dilution at a reasonable value.

The amount of crankcase dilution in an oil depends upon a number of factors such as the driving conditions, the kind of fuel used, and the atmospheric temperature. In the engine, the crankcase oil is constantly losing some of the gasoline it contains by evaporation as well as gaining more gasoline from the fuel leaking past the pistons, and the amount of gasoline in the oil at any time is the resulting balance between these two factors.

Since gasoline evaporates more rapidly from an oil if there is a larger amount of gasoline in the oil, this dilution tends to reach an equilibrium.

Fortunately, in the winter when the low temperatures would have a tendency to increase the viscosity of the oil to such high values that starting would be difficult or impossible, crankcase dilution is at its maximum, and the effect of the higher dilution is to reduce the viscosity just when this reduction is most needed.

Under average conditions, starting with an oil which does not contain any dilution, the percentage dilution increases very rapidly at first until after perhaps 100 to 200 miles, an approximate equilibrium is reached. If a medium oil of the desired viscosity had been used at the start, and if the dilution at equilibrium should be about 10 per cent, the resulting viscosity would be about half the desired viscosity. However, if an oil of about double the desired viscosity had been taken at the start, and before it was put into the crankcase, 10 per cent dilution had been added, the resulting viscosity would be that desired.

This is the principle upon which pre-diluted oils are based. Of course, it is possible to put in the engine an oil of double the desired viscosity, and depend upon naturally occurring dilution reducing it to the proper viscosity; but this requires the operation of the engine at the start with an oil that is heavier than that desired. If the engine should not have been equipped with crankcase ventilator, and jacket water temperature controls, such as shutters or thermostats, water might collect in the crankcase oil in the winter to an extent to make it desirable to drain the oil to get rid of the water, just as the equilibruim was being reached and the entire process would then have to be repeated.

IT IS obvious that if pre-diluted oils are not used, frequent draining of the crankcase will aggravate the troubles due to changes in oil viscosity caused by crankcase dilution, and also that, unless an engine is equipped with crankcase dilution controls such as crankcase ventilators, shutters or thermostats, and efficient oil filters and air cleaners, it may be necessary to drain the crankcase frequently to get rid of water, dirt, and perhaps excessive fuel dilution.

Since from four to six quarts of oil are required to fill the average crankcase, if the oil must be drained every 500 miles, then even under favorable conditions the miles per gallon of oil could not be greater than from 333 to 500 miles. Such a low mileage on oil would not reflect any credit on either the oil companies or the automobile companies.

In the past, crankcase dilution was regarded as a great evil, although at the present time it is recognized that the fuel dilution, if kept within limits, is not only comparatively harmless, but in some cases actually desirable. The dirt and water in the oil are the real objectionable impurities. The water, in addition to causing such troubles as freezing in the oil pump or oil lines, emulsifying the oil so that it changes to the consistency of heavy cup grease and cannot be handled by the lubricating system, also causes other more serious troubles.

## Causes of Corrosion

THE presence of water is one of the necessary factors involved in the corrosion of the hardened steel parts in the crankcase, the cylinder walls, and other bearing surfaces. When gasoline burns the products of combustion are largely carbon monoxide, carbon dioxide, and water vapor. If the water vapor should be completely condensed to water, it would be found that for every gallon of gasoline burner, over a gallon of water would be formed. Of course, most of the water vapor escapes in the exhaust gases, but some of it gets past the pistons and condenses in the crankcase.

All gasoline and similar hydrocarbon fuels carry certain percentages of sulfur as an impurity. This sulfur on burning forms sulfur dioxide and sulfur trioxide, and these products, reacting with the water of combustion, form sulfurous and sulfuric acids. These products, leaking past the piston rings with the other products of combustion, cause the water condensed in the crankcase, to be acid in reaction and therefore, more corrosive.

Since all gasoline, and similar motor fuels sold in this country, contain small amounts of sulfur, under unfavorable conditions, corrosion of the cylinder walls and crankcase parts may occur with any commercial fuel. In fact, water alone may cause steel or iron to rust. However, if the percentage of sulfur in the motor fuel is kept below 0.10 per cent, the maximum amount permitted by the government specification, crankcase corrosion will be eliminated in practically all cases.

The automobile engineers have recognized these facts, and are trying to eliminate water in the crankcase by means of crankcase ventilators, and jacket water temperature controls, such as thermostats and shutters. Since corrosion cannot occur in the absence of water, these devices greatly decrease corrosion. Unfortunately, these devices depend upon the heat of the motor and in winter in starting and on short runs or on light duty the necessary heat may not be available.

Crankcase corrosion has frequently been confused with what appeared to be rapid wear of the cylinder walls and bearing surfaces and faulty lubrication was supposed to be the cause. In most cases it has not been rapid wear but actual corrosion, and lubrication had little or nothing to do with the problem. In all cases we have investigated we have never found that the oil was a factor, but the real causes have been water and the amount of sulfur in the motor fuel.

## Volatility of Increasing Importance

ANOTHER property of oil in which the owner is interested is volatility. Oils may differ among themselves in volatility, and tests have shown that an oil which is relatively non-volatil will give more miles per gallon of lubrication than a more volatil oil if used under conditions where loss by evaporation is important. This difference in volatility would evidently have more effect at high operating temperatures.

At lower operating temperature its effect might be so small as to be negligible. With the present improved roads, more powerful engines, etc., the conditions of high speed, high temperature operation are encountered more frequently than formerly, and volatility is assuming a much greater importance.

Volatility cannot be measured directly by any of the common oil tests previously mentioned, but it is very roughly related to flash and fire. Where a non-volatil oil is required on account of high speed, high temperature operation, a high flash and fire oil will probably give more miles per gallon, other conditions being equal. With lower speed and temperature operation, the flash and fire tests are of very little importance to the automobile owner, and where volatility is important, one should measure it directly instead of guessing at it from the flash and fire data.

Since some of the automobiles which are capable of high speed performance have engines equipped with crankcase ventilators, and since the importance of volatility of the oil for use in engines which operate at high speeds has been demonstrated in such engines operating at high speed, some oil men have mistaken ideas on this subject connecting volatility with crankcase ventilators. However, the factors involved have been known long before ventilators were in use.

In considering the factors affecting lubrication we have seen that the most important property of the oil is viscosity, with volatility having importance under certain conditions of high speed and high temperatures. It is true that the oil consumption increases greatly at high speeds and oils are more volatil at the higher temperatures which powerful engines develop at these high speeds.

However, this is only part of the story. Most oil pumps deliver oil to the oil line in proportion to the engine speed. At first glance it might appear that this is a desirable system, since the pump delivers a definite amount of oil for each stroke of the piston, regardless of speed. Unfortunately, this oil is delivered to the oil line and not to the cylinders, since the cylinders are not directly lubricated from the pressure lines, but are lubricated by the oil that leaks out of the bearings and is thrown on the walls by the motion of the crankshaft. At high speeds oil pressures increase and the crankshaft itself becomes a powerful centrifugal oil pump.

In addition, the amount of oil that leaks out of the bearings is greatly increased by the lower viscosity resulting from higher oil temperatures, and as a result the cylinder walls are usually badly over-lubricated at high speeds.

In a test which we made recently to determine the effects of speed, temperature and volatility of the oil upon oil consumption, a low priced 6-cylinder automobile which is not equipped with a ventilator, was used. Two nationally advertised and distributed oils were selected for this test. These oils both had viscosity of 322 seconds at 100° Fahr. They varied in volatility. One was practically non-volatil, and the other was intermediate in volatility, typical of the average Mid-Continent oil of this viscosity.

At 30 miles per hour the oil consumption for both oils was about the same at 2000 miles per gallon. At 40 miles per hour the miles per gallon was 1100 for the non-volatil oil and 750 for the other. At 50 miles per hour the miles per gallon had dropped to 460 for the non-volatil oil and only 320 for the oil of intermediate volatility. With the higher-priced automobiles, capable of making higher speeds, much greater differences can be obtained.

The problem of designing a lubricating system which will supply the proper amount of oil with thick cold oil at low speed and also with thin hot oil at high speed is one which has never been entirely solved. Although a heavy oil will raise the miles per gallon of oil at high speeds, at the present time, part of the price that must be paid for high speed is high oil consumption.

**Mr. Mougey Suggests—**

That the oil companies put the Society of Automotive Engineers Viscosity Numbers, designating oils of different viscosities, on their oil cans and in their advertising, in addition to the trade names they now use and that these same numbers be used with recommended oils in automobile instruction books. This would do away with much of the confusion resulting from the oil industry's not being able to agree upon what viscosities are represented by the terms light, medium, heavy and so on.

# The NEW TAG Standard Daylight Lamp

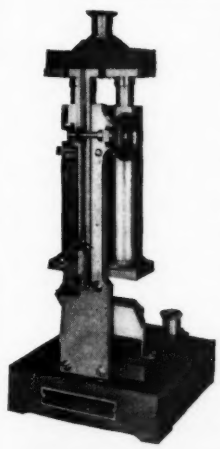
*The new TAG Daylight Lamp in use, with the TAG-Saybolt Universal Chromometer, the standard instrument for determining the exact color shades of Gasoline and Kerosene.*

**Gives a light like that from northern skies on a clear day.....**

Not by means of a color screen (always inefficient) but by the use of carefully selected colored reflectors . . . The "Sun like" unit was found by a Government Bureau to approximate actual daylight closer than any other similar artificial source . . . . Admirably adapted for color determination with the Saybolt or the TAG-Robinson . . . . Has an alumium shield with interior blackened, and may be adjusted up or down . . . Housed in aluminum, and well ventilated, thus adding to the life of the 75 watt C-2 Mazda bulb.

By means of this new lamp you may take colors on dark days or even at night and feel sure that your readings will check with the standard, and be the same as those taken on a clear day.

For determining the color shades of



## Lubricating Oils

the TAG-Robinson Colorimeter is a necessity in every oil laboratory. It not only duplicates all shades of other colorimeters but, in addition, determines many intermediate shades not obtainable with other machines. The N. P. A. color shade may be read directly at the same time as the TAG-Robinson color shade. A new improved oil-proof eye-piece is now furnished.

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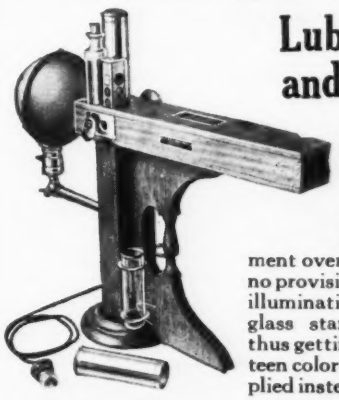

## Lubricating Oils and Petrolatum

the new Union Colorimeter is undoubtedly the most convenient instrument. An improvement over the old model in which no provision was made for proper illumination and in which the glass standards fitted loosely, thus getting lost or broken. Fifteen color standards are now supplied instead of the original seven.

*A book you need—the TAG Oil-Testing Instrument Catalog. Just write "N-699, please" above your address on a postcard and mail it to TAG now!*

**The TAG Oil Manual. 20th revised edition. New procedures. By mail $1.00.**

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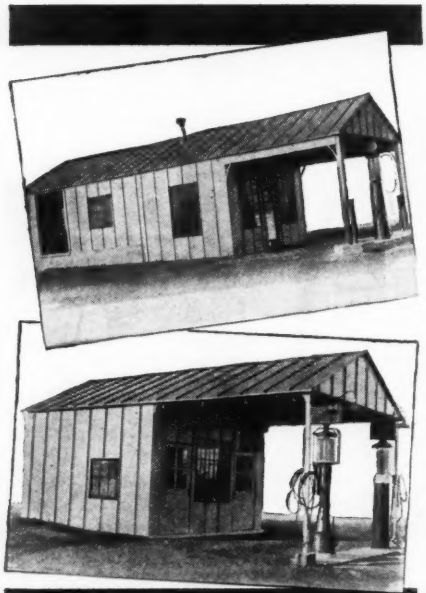

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BRADEN BUILDINGS

## Viscosity, Not Pour Test, Affects Starting

THE difficulty of starting a cold engine with heavy oil has already been discussed. Tests at the Bureau of Standards and also at our laboratory have shown that the force required to start an engine is proportional to the viscosity of the oil at the starting temperature. Since the viscosity of the oil on the cylinder walls has more effect than that of the oil in the bearings or crankcase, and since dilution occurs so rapidly in the oil on the cylinder walls, this factor has been very hard to study. However, these tests have demonstrated definitely that it is the viscosity of the oil under starting conditions and not the pour test or cold test of the oil that affects starting.

The Saybolt viscosimeter indicates that if an oil is near or below its pour test its viscosity is very high. However, this is true only when the viscosimeter is operated under standard conditions of low pressure such as that due to the force of gravity. If the viscosimeter should be operated under high pressure, the effect of the pour test practically disappears. A light oil still appears to have a low viscosity, even if it is below its pour test. This means that the Saybolt viscosimeter does not correctly measure the viscosity of oil below its pour test.

If the oil is used under conditions where the pressure is very low, such as where the oil flows to the inlet of oil pump by the force of gravity, the indications of the Saybolt viscosimeter may be correct. On the other hand, if the oil is used under conditions of high pressure, such as those experienced in bearings, the results obtained with the Saybolt viscosimeter when operated under standard conditions with oils of high pour test, may cause one to draw false conclusions.

Although the pour tests or cold test appears to be important in determining whether or not an oil will flow to the pump intake, the viscosity of the oil at low temperatures and the pump design and location are also factors. In determining whether the oil will flow through the oil lines and bearing clearances after it is in the pump, the viscosity at low temperatures is of very great importance, with the pour test or cold test of little or no effect.

In this discussion we have shown that viscosity is an important property of oil. However, all oils change in viscosity very greatly due to changes of temperature, and yet we know that modern automobile engines operate fairly satisfactorily over a wide range of temperatures and corresponding oil viscosities. It is the aim of the automotive engineer to design his engine so that it will operate satisfactorily with a wide range of oils.

In the instruction book furnished with the automobile, the engineer usually tries to recommend in a general way the type of oil that will give best results. In order to avoid discrimination it would be desirable to exclude trade names, simply specifying the body of oil and mentioning any other properties which may be considered important, such as pour test for very low temperatures and freedom from volatility for very high temperatures. The other properties, including everything known to the oil industry as "quality" of the oil, should be left to the oil companies.

Unfortunately, the oil industry has not been able to agree upon what viscosities are represented by the terms light, medium, and heavy, etc., and since trade names and advertising have been built up around these names it would be difficult to change them. To remedy this situation, committees from the American Society for Testing Materials and the Society of Automotive Engineers have developed the system known as the S.A.E. Viscosity Numbers by which oils of the different viscosities may be designated. If the oil companies would put these numbers on their oil cans and in their advertising in addition to the trade names which they now use, and if the same numbers should be used in the instruction books, it appears that much of the present confusion would be eliminated.

---

### Newton Process Sold

LOS ANGELES, Nov. 5.—Southwestern Engineering Corp. has purchased controlling interest in the Newton Process Manufacturing Co., effective the past week, but no official announcement has been made by either the purchaser or sellers.

Dan Newton, president of Newton Process, and three of his associates, sold to Southwestern total of 498 shares. It is not known what disposition other stockholders have made of their stock, if any. It is understood that for the present there will be no change made in method of handling the Newton Process business in the Mid-Continent.

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WASHINGTON, C. H. O.—J. F. Dressler, who has been district manager for the past eight years at Washington Court House, O. for the Columbus Oil Co., Columbus, O., is confined to his home following an operation the first part of October necessitated by an accident which he had during the summer.

Mr. Dressler expects to make a new connection in the oil industry when he is able to return to work about Jan. 1.

# Inventory Values of Refined Oils Exceed Cost of Thirty Day Supply of Crude

By J. C. Chatfield
N. P. N. STAFF WRITER

Article 2

TULSA, Nov. 5

IN DISCUSSIONS of market conditions in the oil industry the word "distress" is used about as frequently as any other term. Year after year there is talk of "distress gasoline" or "distress fuel."

Inquiry into the situation invariably develops the fact that the seller of the distress oils has built up too great an inventory. Finally the point has been reached where it was necessary to make a sale to obtain money. At such times the seller is not in a position to demand a price either in line with going markets or cost of production. There have been instances where lack of storage space has been the factor in creating distress goods rather than lack of finances to hold the oils.

In some instances it is pointed out in market discussions that crude or refined oil stocks are in "strong hands." It is assumed that the owners have sufficient working capital to maintain the stocks in storage and keep them from becoming distress goods.

Not long ago a keen student of the industry gave his definition of what is meant by strong hands. He said that the strong hands are those who are able to hold onto their stocks until Friday and not be forced to sell on Tuesday. There is a good deal of truth in that observation as has been demonstrated during the past summer when "distress gasoline" was being sold at very low prices by some of the "strongest hands" in the industry.

In a recent article dealing with the volume of refined oil inventories held by refining companies in Oklahoma as compared with those in north Louisiana and Arkansas, the writer gave an analysis of stocks held by companies which report weekly to NATIONAL PETROLEUM NEWS on their operations. It was shown that in Oklahoma refiners have maintained average stocks of finished oils equal to about a month's production during the past three years although the level of stocks in Oklahoma is much lower than in many other sections of the country.

Following out this study of the volume of finished goods in stock in the Mid-Continent the writer has prepared an estimate of the amount of money which refiners in the two areas have had invested in unsold finished stocks at the close of each month since January 1925. The results of this study are given in Table No. 1 in detail and are shown graphically in Fig. 1. In both the table and the chart volume and value of Oklahoma refined oil stocks are compared with those held in north Louisiana and Arkansas.

SINCE the first of 1926 weekly reports gathered by NATIONAL PETROLEUM NEWS have shown the volume of gas oil separately from that of fuel oil and the volume of stove distillate separately from kerosene. As a result it is possible to estimate stock values much more accurately than would be possible from government figures which do not make these separations of heavy oils.

In computing the estimate of stock values the average price for 58-60 U. S. Motor gasoline for the month was used for all gasoline stocks. Kerosene was valued on the basis of 41-43 water white, stove distillate on the basis of 38-40 straw, gas oil on the basis of 32-36 straight reduced gas oil and fuel on the basis of 24-26 in Oklahoma and 18-22 gravity fuel in north Louisiana. Shreveport group prices were used for both Arkansas and north Louisiana stock estimates.

Reporting Oklahoma refiners running an average of a little over 100,000 barrels of crude per day and representing well over half of the operating capacity of the state were found to be maintaining an average investment in refined oil stocks of $5,926,804 in 1925, $7,621,202 in 1926 and $6,416,920 for the first nine months of this year. In north Louisiana and Arkansas the reporting refineries include nearly all important operators in the inland field. Average crude runs for the past two years have been about 45,000 barrels per day and stock investment averaged $925,420 in 1925, $946,495 in 1926 and $868,644 for the first nine months of this year.

In order to get the two groups on a comparative basis the writer has shown total stocks in each district per daily average barrel of crude charged to stills and the number of dollars invested in finished goods per daily average barrel of crude charged to stills.

Examination of Table No. 1 will show that reporting Oklahoma refiners held in storage at the close of the average month in 1925 1,171 gallons of refined oils for every barrel of still capacity being used. In other words the average plant running 1,000 barrels of crude per day to stills maintained a stock of 1,171,000 gallons of finished commodities ready for sale. The lowest inventory was reached at the end of June when 999 gallons were held per barrel of crude run. The peak stocks were reached on Nov. 30 amounting to 1,458 gallons per average barrel of crude run.

In 1926 the reporting refineries in Oklahoma held an average of 1,314 gal-

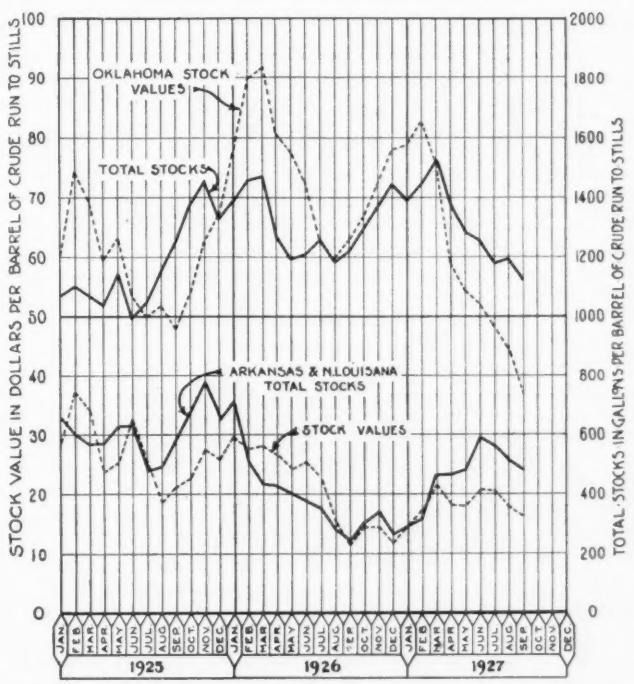

STOCK VALUE IN DOLLARS PER BARREL OF CRUDE RUN TO STILLS
TOTAL STOCKS IN GALLONS PER BARREL OF CRUDE RUN TO STILLS
OKLAHOMA STOCK VALUES
TOTAL STOCKS
ARKANSAS & N.LOUISIANA TOTAL STOCKS
STOCK VALUES
1925
1926
1927

*Fig. 1 Chart showing volume and value of refined oils held in storage by refineries reporting weekly to National Petroleum News in Oklahoma and north Louisiana and Arkansas. In order that the two areas may be on a comparative basis stocks are shown in gallons per daily average barrel of crude charged to stills and inventory values in dollars per daily average barrel of crude charged to still*

## Refined oil inventories at Oklahoma and North Louisiana and Arkansas refineries on basis of both volume and value.

For comparative purposes stocks in both fields are shown in terms of gallons per barrel of daily average crude charge and inventories are valued in terms of dollar value per daily average barrel of crude charged to stills. Stock figures include only plants covered by weekly reports of National Petroleum News.

| | Oklahoma | | | | North Louisiana Arkansas | | | |
|---|---|---|---|---|---|---|---|---|
| 1925 | Total Refined Oil Stocks Close of Month (gal.) | Stock Value at Average Spot Market for Mo. | Stocks in Gallons per Barrel of Crude Charged to stills (Da. Av.) | Stock Value in Dollars per BBl. of Crude Charge | Total Refined Oil Stocks Close of Month (Gal.) | Stock Value at Average Spot Market for Mo. | Stocks in Gallons per Bbl. of Crude Charged to Stills (Daily Av.) | Stock Value in Dollars per Bbl. of Crude Charge |
| January | 100,695,000 | $5,492,246 | 1,071 | $58.40 | 18,337,000 | $ 783,032 | 658 | $28.09 |
| February | 104,154,000 | 7,068,805 | 1,103 | 74.88 | 17,530,000 | 1,082,910 | 608 | 37.55 |
| March | 97,912,000 | 6,340,314 | 1,076 | 69.70 | 19,814,000 | 1,212,106 | 564 | 34.53 |
| April | 97,662,000 | 5,569,735 | 1,038 | 59.21 | 20,719,000 | 864,061 | 570 | 23.78 |
| May | 113,041,000 | 6,195,353 | 1,150 | 63.04 | 22,361,000 | 899,659 | 632 | 25.42 |
| June | 113,525,000 | 6,092,143 | 999 | 53.62 | 21,534,000 | 1,120,672 | 635 | 33.07 |
| July | 119,437,000 | 5,699,395 | 1,047 | 49.97 | 19,299,000 | 1,002,353 | 478 | 24.84 |
| August | 130,314,000 | 5,838,823 | 1,156 | 51.79 | 17,588,000 | 659,960 | 491 | 18.43 |
| September | 132,979,000 | 5,062,537 | 1,252 | 47.67 | 18,888,000 | 687,100 | 591 | 21.50 |
| October | 141,217,000 | 5,517,703 | 1,380 | 53.92 | 24,539,000 | 822,652 | 681 | 22.83 |
| November | 131,656,000 | 5,652,388 | 1,458 | 62.60 | 26,982,000 | 965,476 | 780 | 27.90 |
| December | 129,945,000 | 6,584,805 | 1,326 | 67.22 | 25,383,000 | 1,005,097 | 656 | 25.98 |
| Yearly Average | 117,711,000 | 5,926,804 | 1,171 | 59.34 | 21,081,000 | 925,420 | 612 | 26.99 |
| **1926** | | | | | | | | |
| January | 143,374,000 | 8,068,997 | 1,386 | 78.00 | 26,541,000 | 1,114,479 | 710 | 29.80 |
| February | 145,417,000 | 8,999,238 | 1,460 | 90.33 | 19,671,000 | 1,056,063 | 514 | 27.60 |
| March | 135,595,000 | 8,500,127 | 1,470 | 92.16 | 16,634,000 | 1,059,205 | 444 | 28.19 |
| April | 122,903,000 | 7,801,999 | 1,271 | 80.69 | 19,232,000 | 1,210,976 | 428 | 26.97 |
| May | 124,681,000 | 8,097,714 | 1,195 | 77.60 | 18,957,000 | 1,138,707 | 404 | 24.24 |
| June | 136,665,000 | 8,221,517 | 1,209 | 72.72 | 16,075,000 | 1,080,283 | 382 | 25.65 |
| July | 131,045,000 | 6,536,464 | 1,259 | 62.82 | 16,317,000 | 1,026,599 | 358 | 22.54 |
| August | 125,914,000 | 6,336,793 | 1,183 | 59.52 | 15,874,000 | 865,516 | 281 | 15.30 |
| September | 130,242,000 | 6,703,871 | 1,217 | 62.63 | 13,425,000 | 628,915 | 246 | 11.53 |
| October | 141,522,000 | 7,256,537 | 1,298 | 66.55 | 15,764,000 | 753,417 | 304 | 14.55 |
| November | 142,973,000 | 7,110,531 | 1,379 | 68.57 | 17,473,000 | 747,233 | 341 | 14.56 |
| December | 144,332,000 | 7,820,653 | 1,444 | 78.24 | 14,878,000 | 676,604 | 264 | 12.01 |
| Yearly Average | 135,388,000 | 7,621,202 | 1,314 | 74.15 | 17,570,000 | 946,495 | 390 | 21.08 |
| **1927** | | | | | | | | |
| January | 143,976,000 | 8,167,164 | 1,392 | 78.97 | 14,660,00 | 736,221 | 290 | 14.59 |
| February | 156,193,000 | 8,950,102 | 1,443 | 82.71 | 16,065,000 | 873,571 | 317 | 17.23 |
| March | 161,062,000 | 7,974,935 | 1,527 | 75.60 | 22,653,000 | 1,051,922 | 466 | 21.63 |
| April | 152,366,000 | 6,490,739 | 1,389 | 59.16 | 22,780,000 | 892,818 | 468 | 18.34 |
| May | 142,789,000 | 6,051,625 | 1,287 | 54.56 | 22,270,000 | 825,428 | 484 | 17.96 |
| June | 135,288,000 | 5,602,790 | 1,260 | 52.19 | 26,401,000 | 926,860 | 592 | 20.79 |
| July | 126,604,000 | 5,199,272 | 1,179 | 48.43 | 24,912,000 | 897,424 | 567 | 20.41 |
| August | 132,076,000 | 4,952,232 | 1,191 | 44.64 | 24,822,000 | 855,990 | 516 | 17.78 |
| September | 130,361,000 | 4,363,420 | 1,123 | 37.58 | 22,743,000 | 757,562 | 484 | 16.11 |
| 9 Mo. Av. | 142,301,000 | 6,416,920 | 1,310 | 59.32 | 21,923,000 | 868,644 | 465 | 18.32 |

lons of refined oils in storage during the year for every average barrel of crude run per day. The maximum storage was 1,470 gallons at the close of March and the minimum 1,183 gallons at the close of August.

North Louisiana and Arkansas refiners reports show that in 1925 average stocks of finished oils were only 612 gallons per daily average barrel of crude run, a little over half the Oklahoma record. In 1926 this group of refiners worked stocks down to an average of 390 gallons per daily average barrel of crude run with a minimum of 246 gallons at the close of September and a maximum of 710 gallons at the close of January. Unsatisfactory conditions this year have caused the average to increase again to 465 gallons for the first nine months. The maximum this year was 592 gallons at the close of June.

From the standpoint of value it is estimated that the Arkansas and north Louisiana stocks of finished oils were worth an average of $26.99 per daily average barrel of crude run in 1925. This was reduced to $21.08 per daily average barrel of crude run in 1926 and to $18.32 per daily average barrel of crude run thus far this year. The low value this year may be attributed largely to low prices since stocks have been somewhat larger than in 1926.

Reporting Oklahoma refiners are estimated to have maintained an investment of $59.34 per daily average barrel of crude run to stills in 1925. The lowest point in the year was reached at the end of September when the stock value was computed to be $47.67 per daily average barrel of crude run.

In 1926 the Oklahoma group maintained average stocks valued at $74.15 per daily average barrel of crude run and at the end of March the value had run up to $92.16. At that time the average plant in Oklahoma running 10,000 barrels of crude per day had an investment of $921,600 in refined oil stocks.

This year the very low refined oil markets have brought the investment down to an average of $59.32 per daily average barrel of crude run during the first nine months. The maximum was $82.71 at the end of February and the lowest $37.58 at the end of September.

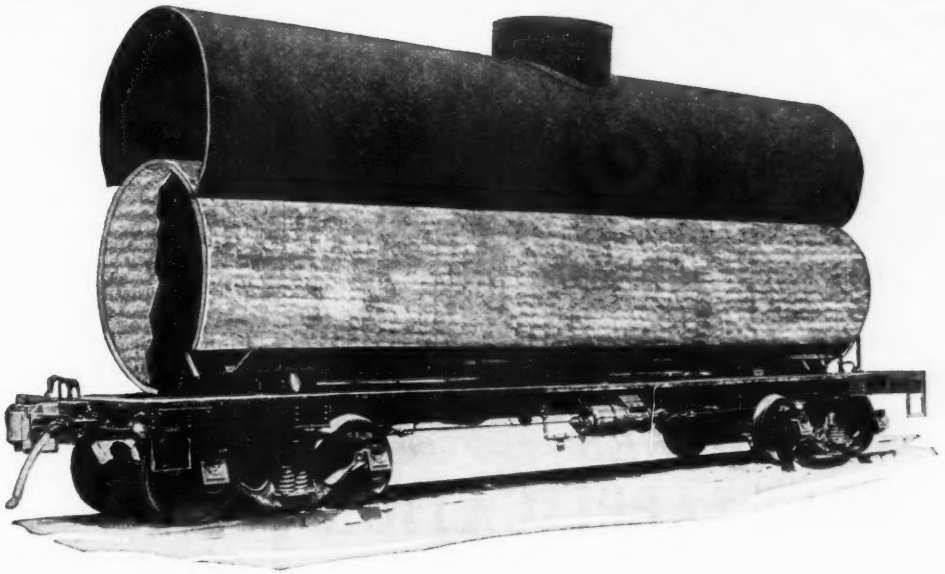
Comparing Oklahoma with the Arkansas-Louisiana group it will be seen that the average Oklahoma plant running 10,000 barrels of crude per day in 1926 maintained an investment of nearly three quarters of a million dollars in refined oil stocks ready for shipment while the Arkansas-Louisiana refiner with a plant running 10,000 barrels of crude per day had an investment of less than a quarter of a million dollars in stocks.

In both cases no effort has been made to estimate the value of partly refined oils in storage or finished lubricating oils. The values are based on stocks of gasoline, kerosene, stove distillate, gas oil and fuel oil except in 1925 when no separate figures were available for distillate and gas oil. In that year fuel oil prices were applied to inventories of both gas oil and fuel oil.

The average posted price of 36 gravity crude oil at the well in Oklahoma was $1.86 per barrel in 1925, $2.10 in 1926 and $1.42 for the first nine months of this year.

Reporting Oklahoma refiners ran an average of 100,746 barrels of crude per day to their stills in 1925. On the basis of the posted price of 36 gravity crude at the well the average daily cost of this raw material was $187,388. Per 30 day month the cost of raw material at the well was $5,621,627. This was $300,000 less than the average value of refined oil inventories held by reporting Oklahoma plants.

Average crude runs of reporting Oklahoma plants in 1926 were 103,305 barrels per day, which at an assumed cost of $2.10 per barrel at the well cost $216,405 per day or $6,492,150 per month as compared with average refined oil inventories of $7,621,202 at the close of the month. The difference of $1,129,052 in cost of crude at the well and the value of refined oil inventories



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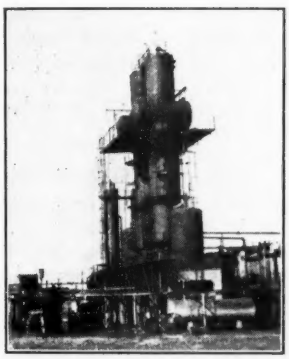

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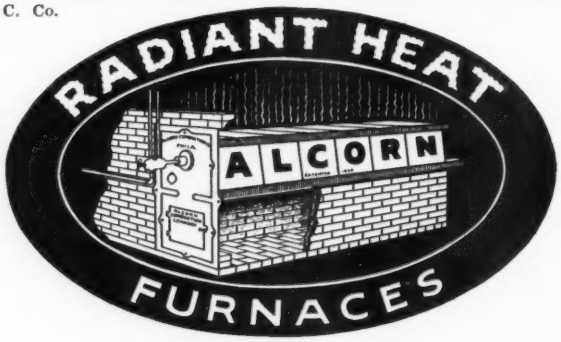


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would be great enough to pay average transportation costs from well to refinery and a small premium.

With average runs of 108,833 barrels of crude per day this year at the average cost of $1.42 per barrel at the well for 36 gravity crude reporting Oklahoma refiners may be assumed to have spent $154,543 per day for crude or an average of $4,636,286 per month as compared with an average refined oil inventory at the close of each month valued at $6,416,920.

From these estimates it will be observed that the average refiner in Oklahoma, who maintains smaller stocks than the average refiner of the United States, keeps enough of his capital tied up in finished goods to provide his plant with crude oil for a full month including all transportation charges. It is obvious that this large investment in stocks is one major reason for the frequent complaints that petroleum manufacturers do not have sufficient working capital.

In the automobile field which has reduced inventories down to a very few days and sometimes even to hours, Cady B. Durham, vice president of the Buick Motor Co., recently said in an article in The Magazine of Business that "Making money by production control is not simply a matter of small or large savings inside the plant. Production control in its broad sense is the operation of budgeting as manifested on the production side.

"It must start with the sales schedule. It inevitably involves purchasing, deliveries and transportation, materials in storage, handling processes and storage. It coordinates and sychronizes all of these, so that the minimum investment of working capital assures delivery of finished goods to the customer on time.

"With high wages and high material costs on one side; with keen competition causing low selling prices on the other side—the manufacturer finds himself between two economic millstones. If he is to avoid being ground between them, he must pry them apart. The problem is to turn existing demand to profit making account in the face of the tendency to lower prices which present excess capacity brings on."

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### Indian Has Open House

WEST BADEN, Nov. 2.—The Indian Refining Co. sent invitations to all oil men attending the A. O. M. A. convention here to be the guest of the company on a special inspection trip of the refining plant Nov. 5. The company arranged for Pullman accommodations to take the party from West Baden to Lawrenceville, Ill., and after the day spent in the plant was to either bring its guests back to West Baden or take them to convenient railroad junctions for their trip home. The company's plant was 72 miles from West Baden.

# The Editors' Viewpoint

National Petroleum News

## Support the Bureau

THAN the United States Bureau of Mines experimental station at Bartlesville, Okla., there exists no better medium for co-operative effort in petroleum industry research. Its findings are accepted as authoritative by oil companies everywhere; the thoroughness of its methods is attested by the caliber of its "graduates" who have gone forth into oil company service.

There is some considerable demand now for joint work in the industry on common production problems. In the recent Ponca City meeting of engineers, geologists, physicist, who gathered for a three-day discussion of the function of natural gas in the production of oil, repeatedly there was voiced the desire for a real, fundamental attack on the question at issue. The men who attended the meeting formed themselves into a permanent organization, which later may be taken over by the American Petroleum Institute.

Still, the setting up of an organization will not entirely suffice. There must be a proving ground for the ideas and the theories of these petroleum engineers. This proving ground exists at Bartlesville. Unfortunately, its operations are badly handicapped by lack of funds.

Biennially, the legislature of Oklahoma appropriates some money to be spent by the Bartlesville station. The last session awarded $50,000 for two years. Much more is needed and would be spent to the advantage of the industry.

There is no good reason why legislatures of other states should not help, since the work done at Bartlesville becomes the common property of the industry. Kansas, Texas, Louisiana and other states are benefited. The reason why they probably never will help is that the station is located in Oklahoma and legislatures see only the advantage of a thing like this to a state or a community.

Congress has been niggardly with the Bartlesville station. In the final issue, of course, the research in petroleum is of advantage to the whole people and should be supported by them. But, getting money from Congress is a task that the special pleaders for the Bureau of Mines have not been able to accomplish.

Only one other way remains and that is for the oil industry to subscribe.

Under way at this time at the station are experiments in oil and gas that bear intimately upon the field problems of the producer. In the well-equipped laboratory are going forward tests on the solubility of gas in oil, on repressuring sands with air and with gas, on displacement of oil in a sand with water. These will supply data of a most practical nature to the oil producer.

Now, any oil company can send its technologists to the Bartlesville and they can use laboratories with their special equipment in experimentation. Few production companies have set up adequate research departments, hence the facilities of the Bartlesville station are not duplications. Furthermore, the company technologist will find at his disposal the methods which have cost many thousands of dollars to develop. The company man can go ahead with his work on his own account or, if the problem is one of more than inter-company interest, the Bureau of Mines men will help him.

Other industries, such as the natural gas industry, have established jointly supported laboratories. The oil producer has one already set up for him and a few dollars from each of him will do much in paying for the very necessary things the Bureau needs.—L. E. S.

## Wrong Ways to Sell

WE DISLIKE to talk so much about some of the advertising to and in behalf of the oil trade that doesn't always jibe with the facts or with giving the industry a square deal.

But the advertised statements are the ones that have quite an effect upon the public's opinion of the industry. Every oil man knows that the industry has enough trouble wrestling with the public's opinion because of misstatements, not only of the industry but of politicians and others, so that it should not also have the task of trying to combat misleading statements made in oil company and equipment company advertising. All equipment advertising should be particularly well guarded and should be in the interest of the oil industry always, as well as in the interest of that particular advertiser.

In a Cleveland newspaper the other day one large oil company said "some oil dealers are content to sell you any oil offered them by the 4900 oil refiners in the United States." There are not that many refiners in the first place, which would indicate that the man who wrote the copy didn't know what he was talking about. Anyway, why slam all of the dealers who don't happen to buy from you?

Then comes an equipment manufacturer who advertises to the trade, "Appearances are against the service station that fills containers with oil in advance. The customer has no way of knowing that he is getting the oil that he orders and pays for. He wonders if a mistake has been made—or if inferior oil has been substituted purposely. Then he worries about lubrication trouble. If anything does go wrong with his motor, he condemns the oil in the station that sold it."

At different times the oil industry has had to contend with what is to the oil industry unfair sales and advertising tactics of equipment manufacturers. These manufacturers have oftentimes overlooked the fact that the men they are trying to put in wrong are the men they want for their customers.

Certainly the oil companies who patronize the equipment men, are entitled to demand only the fairest kind of treatment. The foregoing quotation is anything but fair to the oil companies. It is nonsense to make the argument that is made there. Regardless of the character of the container or the way in which the oil is sold, the customer has just as much right to expect the right oil as he has to expect the right gasoline—as he has to expect water that will fill the radiator—as he has to expect air that will fill his tires—as he has to expect the right change when he has concluded his transaction.

Impugning the honesty of the oil industry is not the way to sell goods to it.—W. C. P.

THE above is one of the many different type buildings found in our new HAND BOOK OF SERVICE STATION DESIGNS.

This type building can be furnished in 154 different combinations as to size of building and plan of canopy. We can furnish a design that will suit any possible requirement of yours.

*Write for our catalog — it will answer all your questions as to what kind of building to use.*

J. R. DOELKER CO.
898 Ingleside Ave. Columbus, Ohio



# Warren Electric Grease Extractor

## *Works as Well in Practice as in Theory*

IT is easy to show any man who will investigate that this new appliance will add 200 per-cent to his sales of grease.

And the Warren Electric Grease Extractor will prove out because it is so light weight, handy, and simple that a man likes to use it. Cleans out all old grease at the rate of two pounds a minute—no flushing required.

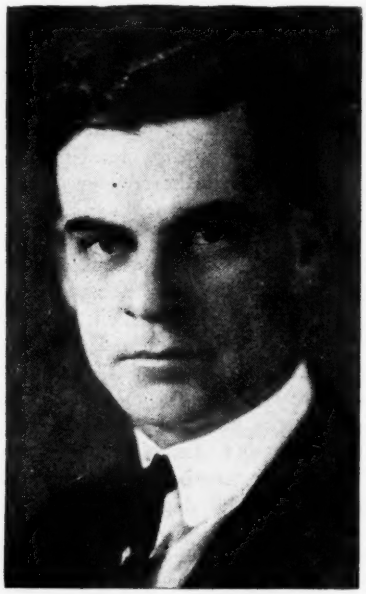
Here is a money maker—a time and labor saver you cannot afford to get along without.

**The Warren Refining and Chemical Co., Cleveland, O.**


## W. G. (Bill) Hanrahan Joins Gaso Pump Co.

TULSA, Nov. 7.—William Griffin Hanrahan, of Tulsa, has been appointed manager of sales of the Gaso Pump & Burner Mfg. Company.

Mr. Hanrahan, who has already taken up his duties with the Gaso company, has been identified in turn with the Indiana Pipe Line Company, Montpelier, Indiana; The Ohio Oil Company, Bridgeport, Illinois; The Texas Pipe Line Company, and The Standard Oil Company of Louisiana. From 1920 to 1923 he was with the Foster Oil Company, of Tulsa, after which he was with the Vacuum Oil Company's land department up to June, 1926.



*W. G. (BILL) HANRAHAN*

Formerly, Mr. L. D. Armstrong, General Manager of the Gaso Pump & Burner Mfg. Company, also functioned as Sales Manager of the organization.

Mr. Hanrahan has five brothers who are also prominent figures in the oil industry, three of whom are with the Humble Pipe Line Company—R. V. Hanrahan as President, J. C. Hanrahan as Superintendent, and T. R. Hanrahan as Superintendent. The other two brothers, J. J. Hanrahan and E. J. Hanrahan, are connected with the Texas Pipe Line Company in executive capacities.

### C. E. Mills Director Resigns

SYRACUSE, N. Y., Nov. 7.—George A. Hill, who has been with the C. E. Mills Oil Co. for 7½ years, resigned as director and sales manager Oct. 31. He was formerly for 27 years at the Syracuse and Albany district offices of the Standard Oil Co. of New York in various capacities.

Mr. Hill is now enjoying a vacation but expects to be back in the oil industry shortly.

# Principles of Operation of the Plunger Pump in Oil Wells

By Lester C. Uren
Professor of Petroleum Engineering, University of California

Article 2

## External Factors Influencing Pump Efficiency

This is the second of a series of five articles dealing with the principles and practice of oil-well plunger pumping. The first article reviewed the factors inherent to the pump itself, which influence its efficiency of operation. The present article has been concerned with factors external to the pump, influencing pumping efficiency.

In the present article, it has been shown that the fluid level maintained in the well has an important influence, both on the mechanical efficiency of the pump and on the rate of production of the well. Methods of determining the most efficient operating fluid level are suggested, and the use of a fluid level indicator as a means of maintaining the proper level, is proposed. It is shown that gas and sand entering the pump with the oil, may be detrimental in many ways, and a variety of methods and devices for gas and sand control are described.

The next article in this series, descriptive of the various types of oil-well plunger pumps, will appear in an early issue of NATIONAL PETROLEUM NEWS.

THE preceding article of this series, reviewing recent literature on oil-well pumping practice, was devoted to an analysis of the fundamental principles which determine the mechanical efficiency of the plunger pump in oil-well service. The present article deals with physical factors external to the pump itself, which influence production efficiency, more particularly with the effect of fluid level, submergence and the passage of gas, sand and water with the oil into the pump.

These are factors which influence to an important degree the efficiency of oil production, and the oil producer should give particular study to their control and strive to maintain operating conditions which will minimize their detrimental effects.

### Influence of Fluid Level on Production Efficiency

FOR maximum efficiency in oil production, it is essential that a proper fluid level be maintained in the well with respect to the position of the oil sand and the pressure conditions existing within it. The position of the pump in the well and the rate of pumping established will largely determine the fluid level maintained. The position of the fluid surface outside of the tubing directly determines the static pressure maintained by the column of accumulated fluid on the productive oil sand, and the back-pressure so developed on the sand determines the rate at which oil and gas may enter the well.

This fluid back-pressure also influences the ultimate oil rocevery that may be obtained from the sand, as well as the gas-oil ratio, which latter factor, within certain limitations, is a measure of oil expulsion efficiency.

Generally speaking, when the pumping stage in the productive life of a well has been reached, the reservoir pressure has declined to such a point that only a moderate back-pressure need be maintained to prevent channeling of the formational gas through oil-drained spaces about the wells. These oil-drained channels through which gas finds a ready outlet to the wells, are often immediately beneath the cap rock, and in order to prevent escape of gas at this point, most producers place the pump working barrel and oil inlet so that the fluid will never be reduced below the level of the cap rock.

This practice is probably necessary and desirable, but in many cases, where much higher fluid levels are carried—perhaps several hundred feet above the productive sand, the back pressure developed by the accumulated fluid in the well must seriously restrict flow of oil from the reservoir rock.

THE static pressure of the column of fluid in the well, averaging approximately 40 pounds per 100 feet of depth, directly opposes the expulsive pressure of the formation gas. For example, if the formation pressure were 120 pounds and the pumping mechanism were so placed and operated as to maintain a fluid level 200 feet above the oil sand, 80 pounds pressure in the well would oppose the 120 pounds pressure in the sand, leaving a net effective pressure of only 40 pounds to force the oil into the well.

Under the conditions cited, this would undoubtedly restrict to an important degree, the rate of oil production. Moderate back-pressure, sufficient to restrain free escape of formational gas, is beneficial and results in reduction of the gas-oil ratio and in conservation of energy, but excessive back-pressure needlessly restricts flow of oil into the well, without compensating advantage in gas energy conservation.

Gas permitted to enter the well at high pressure represents loss in usefully applied energy, insofar as expulsion of oil from the sand is concerned. For any set of conditions, there is a certain fluid level, contributing a certain back-pressure on the sands, which is most efficient from the standpoint of application of formational gas energy, and the oil producer should strive to determine and maintain this fluid level in each pumping well.

FEW oil producers have given attention to the determination of fluid-levels in pumping wells; in fact, there is ordinarily no means provided in the equipment and operation of the well, of determining the fluid level while the pump is at work. We must distinguish between the static fluid level, or that position to which the fluid rises in the well when the pump is idle, and the operating fluid level to which the surface of the well fluid falls while the pump is at work.

Within limits, this latter level is determined by the rate at which the oil is pumped from the well. In continuous operation, the oil must enter the well as rapidly as it is pumped out, the fluid level rising or falling—and thus altering the back-pressure on the sand—until an equilibrium condition is reached.

If the rate of pumping is increased, the fluid level in the well subsides, reducing the back-pressure on the sand so that more oil enters to provide the increased supply. If on the

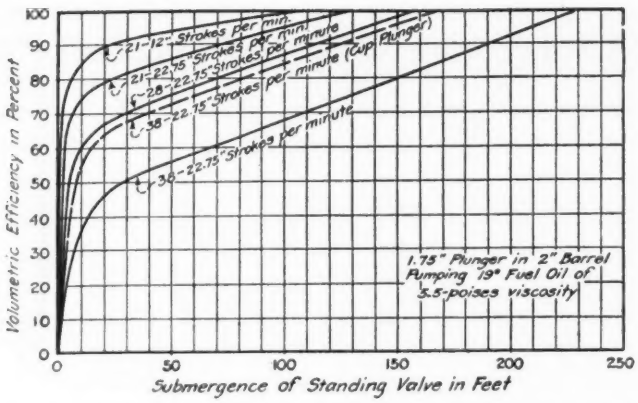

Volumetric Efficiency in Percent
Submergence of Standing Valve in Feet
21-12" Strokes per min.
21-22.75 Strokes per minute
28-22.75 Strokes per minute
38-22.75 Strokes per minute (Cup Plunger)
36-22.75 Strokes per minute
1.75" Plunger in 2" Barrel
Pumping 19° Fuel Oil of
5.5-poises viscosity

*Fig. 1—Graphs showing variation of volumetric efficiency of a 2-inch plunger pump with submergence*

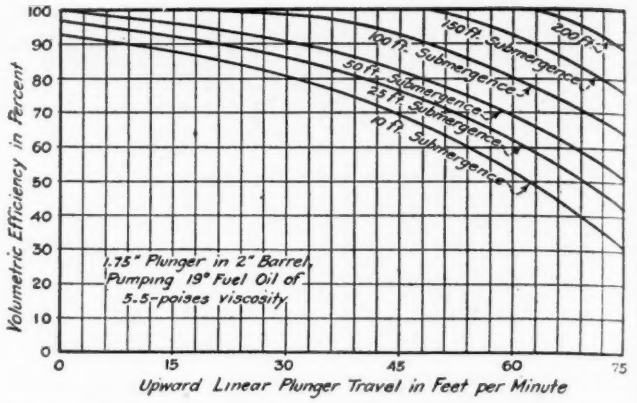



*Fig. 2—Graphs showing variation of volumetric efficiency with rate of plunger travel, for varying submergence*

*(After Uren, Sargent and Collings in Transactions, A. I. M. & M. E.)*

other hand, the rate of pumping is diminished, the fluid level rises until sufficient back-pressure is developed on the productive sand to limit the supply of incoming oil to the equivalent of that pumped out.

IT IS apparent that we may increase the productivity of a pumping well, within the limitations imposed by the capacity of the pump, by increasing the pumping speed and thus reducing the fluid pressure on the sand to the lowest point compatible with proper formational gas control. When the fluid level falls below this point, more gas and less oil will enter the well and the fluid level will continue to fall until it reaches the point at which it enters the gas anchor. The producer may determine this critical point by progressively increasing the rate of pumping and carefully gauging the rate of oil and gas production for each adjustment of the pumping equipment until that rate of pumping giving maximum sustained production is determined.

In a study of the rate of oil production as influenced by the position of the fluid level in a pumping well, the writer has shown that there is a certain relationship between the thickness of the productive sand, the pressure conditions in the sand, and the fluid level giving a maximum rate of production.[1] When the static fluid level in the well is at an elevation above the top of the source rock, greater than the thickness of the productive sand, the operating fluid level[2] giving maximum production is always at the top of the productive sand. When the static fluid level is less than double the thickness of the productive sand above the bottom of the source rock, the operating fluid level giving the maximum rate of production, is at an elevation above the bottom of the productive sand equivalent to half that of the static fluid level above the same point. For best results, the operating fluid level must never fall below the middle of the productive stratum.

These conclusions have been arrived at merely from a consideration of forces active in bringing oil into the well, but it may often happen that it will be necessary or desirable to maintain a higher fluid level than that theoretically most efficient, in order to prevent channeling of gas through the sands about the well, or to control the movement of water or unconsolidated sand into the well.

If conditions within the well and the efficiency of the pump remained constant, it would be a simple matter to maintain this most efficient fluid level and pumping rate, once the pumping speed necessary to accomplish it had been determined. Unfortunately, however, plunger pumps are susceptible to rapid fluctuations in efficiency. Wearing of valves, seats and plungers by the scouring action of sand, decreased efficiency due to sand accumulation or formation of a gas lock in the working barrel, will reduce the efficiency of the pump, so that it delivers less oil for a given rate and length of stroke. The result is that the fluid level rises and less oil enters the well. The over-all efficiency of the well and its equipment is thus limited by that of the pump.

It would be helpful if the oil producer had a ready means of knowing at all times, the fluid levels in his pumping wells. Once the proper fluid level for the conditions presented in each well had been determined, it could then be maintained at that point by gradually increasing or decreasing the rate of plunger travel as the changing condition of the pump, variation in gas and oil flow from the sand, etc., might require.

In an effort to meet this need of the producer for a knowledge of operating fluid levels in his pumping wells, the writer has designed a fluid-level indicator, which can be installed in the well as a permanent part of the pumping equipment and which will display at all times on a recording instrument at the surface, the submergence of the pump below the surface of the fluid in the well. A complete description of this device will be found in the reference given in footnote No. 1. Such a device might be adapted to automatic control of the pumping equipment so as to maintain a constant fluid level in the well.

### Influence of Submergence on Efficiency of Pump

UNLESS immersed in the well fluid to a considerable depth, the pump is dependent for its supply of oil, on the suction effect of the ascending plunger. Due to release of gas from solution in the oil on release of pressure in the working barrel, no great suction effect is probably developed and hence the maintenance of ample submergence is an important consideration.

In the previous article of this series, it was shown that considerable resistance to the influx of oil through the pump standing valve is offered by restrictions in the cross-section of flow at this point and by the inertia of the oil left in the working barrel and in the tubing below the standing valve. The writer estimates that for a 2-inch pump, making thirty-eight 22¾-inch strokes per minute, a static pressure of about 9.45 pounds is necessary to overcome the entering resistance, a pressure which would require a submergence of the standing valve of 23.6 feet if the oil were 0.94 in specific gravity. That is, without plunger suction, no oil would enter the pump unless a submergence of 23.6 pounds were maintained, and if we are to attain reasonable pump efficiency, a greater submergence would be necessary.

In a series of experiments conducted in the petroleum laboratories of the University of California, under the supervision of the writer,[3] the effect of submergence on the efficiency

1.—Uren, L. C., "Significance of Fluid Level in Oil-Well Pumping." Transactions, American Institute of Mining and Metallurgical Engineers, Vol. LXXI (1925), pp. 1301-1314.

2.—Definitions of the terms "static fluid level" and "operating fluid level" have been given in an earlier paragraph.

3.—Uren, L. C., Sargent, S. B., and Collins, V. J., "Influence of Submergence on the Efficiency of the Oil-Well Plunger Pump," see pp. 157-169 of "Petroleum Development and Technology in 1925," a volume published by the American Institute of Mining and Metallurgical Engineers, May, 1926.

of the plunger pump was studied. A 2-inch pump of common pattern was employed, operated by a motor-driven walking beam, with facilities for varying the speed and length of stroke and the submergence of the standing valve, and with means of accurately measuring the volume of oil delivered. Figures 1 and 2 display in graphic form the results of these tests.

The graphs indicate that the oil-well plunger pump is dependent to an important degree upon the submergence provided, and that for a 2-inch pump, lifting a heavy, viscous oil, a submergence of 100 feet or more is necessary for reasonable pump efficiency. However, with larger pumps and less viscous oil, a smaller submergence will be equally efficient.

It may be difficult to reconcile the opposing factors of low fluid level and adequate submergence of the pump for maximum efficiency, particularly since sand incursion and control of gas make it undesirable to place the working barrel below the level of the cap rock. As a means of carrying a low fluid level with respect to the oil-producing sand, and still providing ample submergence for the pump, the writer has suggested that in many cases, it may be possible to drill a sump of considerable depth below the oil sand, into which the oil may drain and accumulate, and in which the pump may be placed. (See Figure 3.) If a fluid-level control device be employed, so that the oil level will be maintained at the position of maximum efficiency both with respect to the position of the pump and that of the sand, it should be possible with the aid of such a sump to overcome the difficulties outlined in the foregoing paragraphs. If there is danger of encountering bottom water, or low-pressure, dry sands into which the oil may escape, it will, of course, be inadvisable to attempt to make use of the plan suggested.

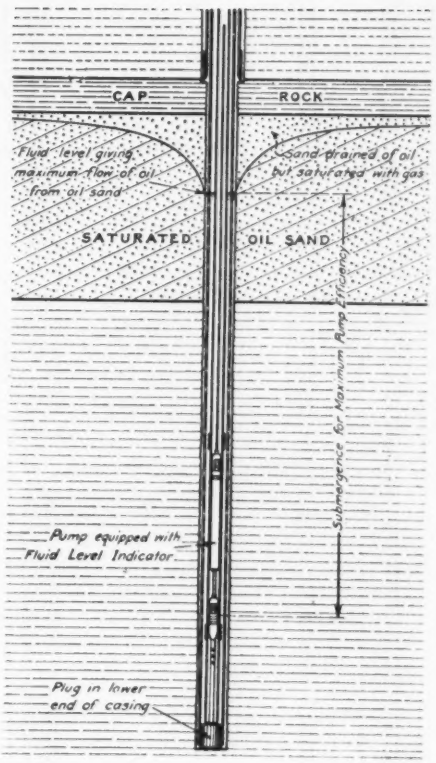

CAP
ROCK
Fluid level giving maximum flow of oil from oil sand
Sand drained of oil but saturated with gas
SATURATED
OIL SAND
Submergence for Maximum Pump Efficiency
Pump equipped with Fluid Level Indicator
Plug in lower end of casing

*Fig. 3—Sketch illustrating location of oil-well pump below an oil sand, providing ample submergence for pump without sacrificing oil production by maintaining a high fluid level (After Uren, Sargent & Collins in Transactions, A. I. M. & M. E.)*

### Importance of Gas Control in Securing Efficient Operation of the Oil-Well Plunger Pump

GAS entering the pump with the oil causes serious loss of efficiency and may at times, even prevent operation of the valves. Free gas brought in with the oil through the standing valve, or released from solution in the oil by reduction in pressure due to the suction effect of the rising plunger, will on completion of the up-stroke of the plunger, partially fill the space between the two valves, so that on the following down stroke, less oil will be displaced through the working valve than if no gas were present.

Not only does this gas reduce the volumetric oil displacement, but it also seriously delays the action of the valves. Any free gas that may thus be trapped between the valves, must be compressed on the down-stroke of the plunger, to the pressure of the superimposed column of oil in the tubing, before the working valve may open and permit upward displacement of the oil into the tubing. The effective length of stroke of the plunger is thus appreciably shortened. If a large amount of gas accumulates in the working barrel, the valves may remain closed, the plunger merely expanding and compressing the gas between the two valves with each up-and-down stroke.

On the up-stroke of the plunger, such gas as may be left below the working valve must be expanded to the pressure of the oil below the standing valve before the latter may open, causing an important loss in the effective length of the plunger stroke.

For example, in a 3,000-foot well, where the pressure within the tubing above the standing valve is equivalent to about 80 atmospheres, even so small a volume as one cubic inch of compressed gas left between the valves at the conclusion of the down-stroke of the pump, occasions a loss of about 13 inches in the effective up-stroke of a 2¾-inch plunger. That is, the plunger must travel upward 13 inches and the gas must be expanded to 80 times its compressed volume before the standing valve may open to admit an additional supply of oil.

This difficulty, due to the presence of free gas between the valves of the pump, may be minimized by installing a suitable gas anchor to exclude free gas; by providing as

*Patent Pending*

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is an important factor in any successful business. The Humble Oil & Refining Company appreciates that to hold your good will it is necessary to supply you with products, the sale of which will gain and hold the good will of your customers.

Humble Motor Oils satisfy. They are produced only from high-grade cold-test crudes and are "straight run." They are not mixed or blended. Humble Motor Oils are of a clean, beautiful amber color and have just the right body to properly lubricate all bearing surfaces, and when burned leave little carbon to foul the motor or contaminate the crankcase mixture.

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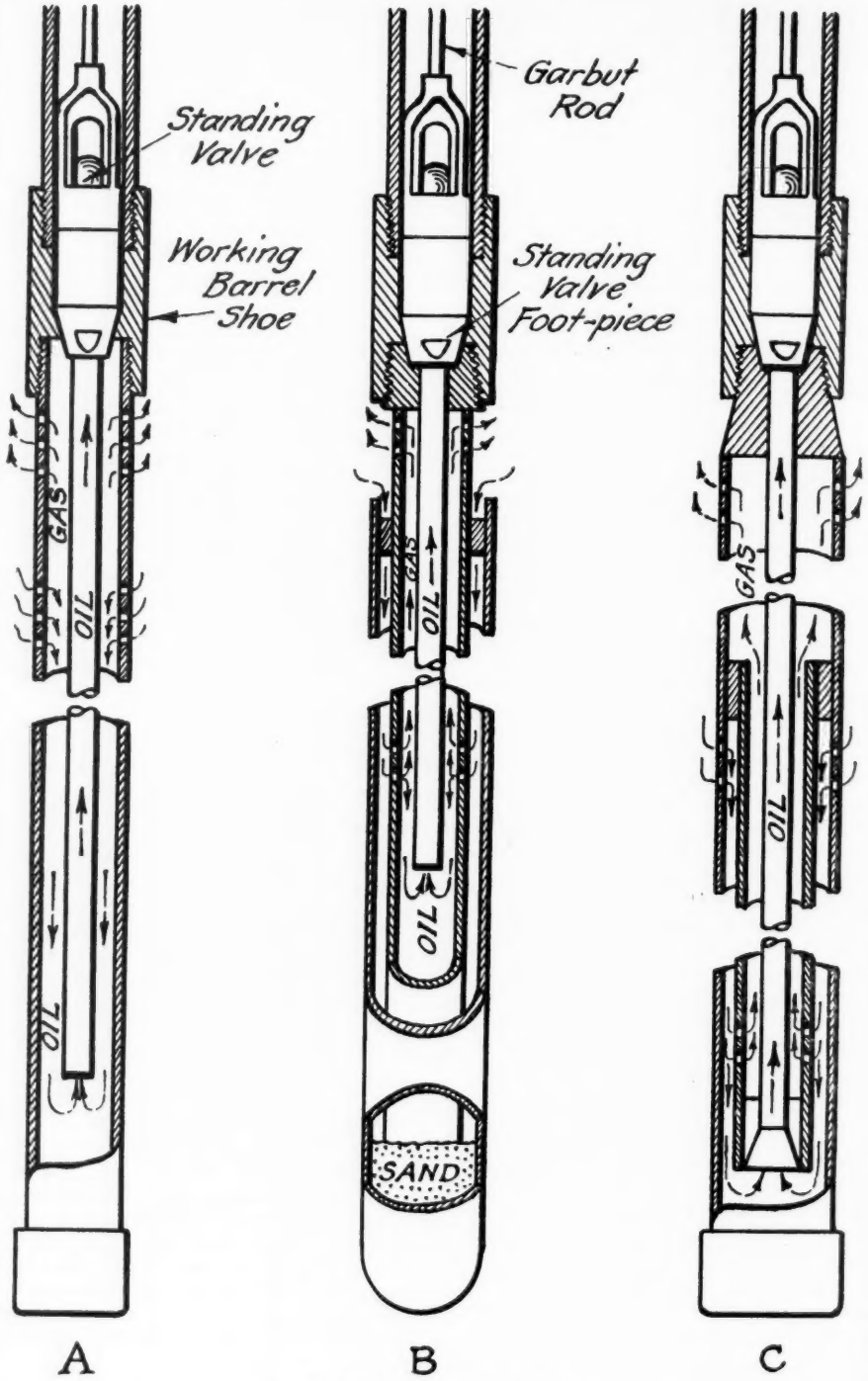


*Fig. 4—Types of gas anchors*
*(Types B and C after B. H. Scott in "Oil-Field Engineering")*

low a submergence as other considerations will admit, so that the oil will be admitted to the pump under relatively low pressure and will therefore contain comparatively little dissolved gas, and by placing the working valve in the lower end of the plunger instead of in the upper end. The smaller the volume of fluid left between the valves at the conclusion of the down-stroke of the pump, the less will be the difficulty experienced due to alternate compression and expansion of gas.

Another method of avoiding loss of plunger motion resulting from accumulation of gas between the valves, is to place a standing valve in the tubing immediately above the working barrel. The function of this valve is to receive and retain the weight of the fluid column at the termination of the up-stroke of the plunger, thus permitting the traveling valve to open promptly when the down-stroke begins.[4]

It is common practice to make use of some form of gas "anchor," or gas trap, to prevent free gas from entering the pump with the oil. In its simplest form, this consists of a joint

4.—Scott, B. H., "Application and Function of Production Methods and Production Equipment," Oil-Field Engineering, August, 1927, pp. 25-33.

or two of tubing suspended from the shoe of the working barrel, capped at its lower end and provided with one or more holes near its upper end, through which oil and gas may enter. The holes in this tubing fix the lowermost level to which the fluid surface may be depressed by action of the pump.

Oil entering this tubing is permitted to enter the pump only through a smaller tubing, concentric with the former, the upper end of which is screwed to the standing-valve footpiece, while its lower end is well submerged beneath the surface of the fluid in the outer tubing.

Figure 4 illustrates three different designs of gas anchors that have found use in oil-well pumping practice. In each case, separation of gas from the oil is accomplished by causing the oil to flow down through the annular space between two tubes, one telescoped within the other. During this downward movement of the oil, the gas separates and moves upward by reason of its lower density, escaping through apertures above the oil inlet to the space between the casing and tubing, from which it is permitted to escape at the side outlets of the casing head.

In addition to the use of a gas anchor, various special patterns of pumps are employed, which incorporate special features designed to separate gas from the oil before it is forced into the tubing. In one design, the gas is released after entering the pump and undergoing partial compression, by an auxiliary valve which by-passes some of the oil above the working valve back into the gas space below, at the beginning of the down stroke of the plunger.[5]

THE writer has proposed a device to be used in connection with a double-acting pump, in which the oil pressure is reduced to atmospheric pressure, or below, thus releasing the gas from solution and separating it from the oil, before the latter is drawn into the pump.[6] Still other gas-control devices that may be incorporated in the design of the pump, take the form of special types of valves, actuated by other means than fluid compression.[7] These will be described in greater detail in the next article of this series.

Still another method of overcoming the difficulty experienced in the handling of gas with the oil in a plunger pump, is to increase the length of stroke. The total loss in the effective stroke of the pump, due to the presence of gas, will be the same, whether the pump is operating with a long stroke or a short one; but the percentage of loss is reduced as the length of stroke is increased.

For example, a loss of 12 inches of a 2-foot stroke would be a serious matter, but the same loss in a stroke of say, 6 feet, is of less moment. A variety of devices are available for giving the plunger a stroke in excess of that normally provided by the crank, pitman and walking beam, which might be made use of as a means of meeting the gas problem in oil-well pumping. These long-stroke devices also, are to be described in greater detail in a later article of this series.

While gas is in most respects detrimental in its influence on the mechanical action of the pump, it may at times increase the over-all production by "heading" or causing flow of oil through the pump and tubing. In a certain stage of the productive life of a well, after the oil will no longer flow naturally, the pump may be used primarily as an agitating device and as a means of reducing pressure within the oil to stimulate release of gas.

This free gas, so formed, provides a jetting or ejector effect within the tubing, which may cause intermittent flow. At such times, a large quanti-

5.—Oil Field Engineering, "Hubbard Oil Head Method of Pumping Deep Wells Exceeding 3,500 feet," May, 1927, pp. 57-60, 63.

6.—Uren, L. C., "The Problems of Pumping Deep Wells for Petroleum," Transactions, American Institute of Mining and Metallurgical Engineers, Vol. LXXIV, pp. 828-854. See also pp. 130-156 of a book published by the Institute, entitled, "Petroleum Development and Technology in 1925."

7.—Sargent, S. B., Jr., "The Theory of Pump Design and Practical Application of Various Types,' Oil Field Engineering, October, 1927.


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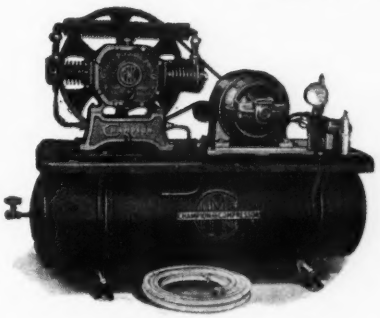

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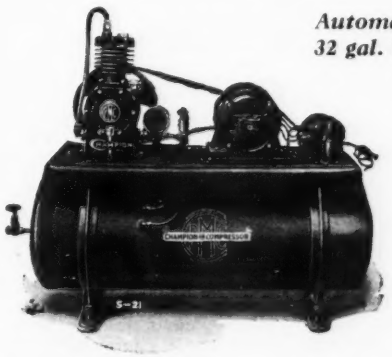

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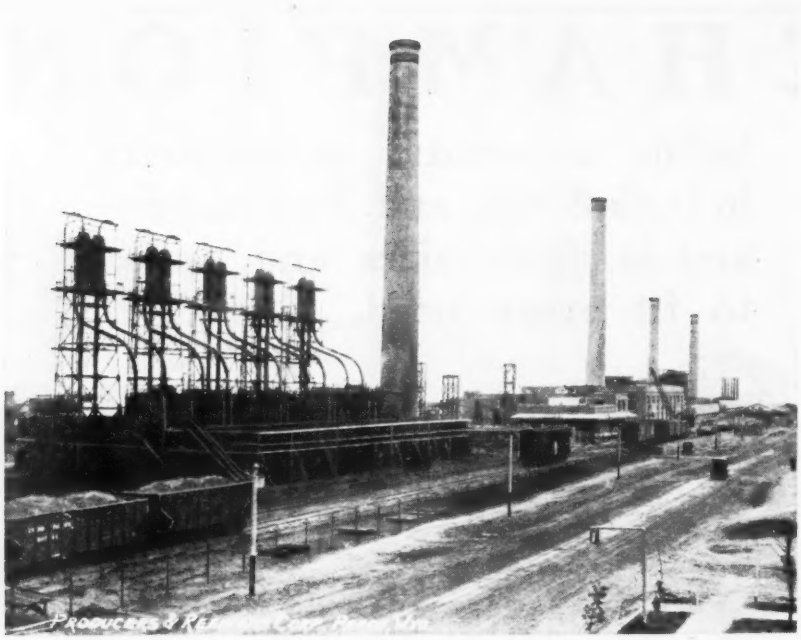

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ty of oil may be ejected from the well, followed by a period of quiescence during which conditions are developed for a repetition of the flow. Meanwhile, the pump may be kept constantly at work. If a gas-lock forms in the pump and no oil enters the tubing, the fluid level rises in the well until a point is reached at which the static-pressure developed is sufficient to cause a "heading" of the oil. When such a flow occurs, both valves of the pump remain open, irrespective of the direction of movement of the plunger.

The gas pressure maintained in the space between the casing and tubing, above the surface of the oil in a well, will have an important influence on the fluid level, on the action of the pump, and on the rate at which oil may flow from the reservoir rock into the well. If the gas is permitted to flow from the side outlets of the casing head at or near atmospheric pressure, the downward pressure of the gas on the liquid oil surface will be low: possibly only a few pounds.

If, however, the flow of gas from the casing-head outlets is restricted somewhat, a back-pressure is developed which operates to increase the downward static fluid pressure on the productive sand, as well as the pressure operative in forcing oil up through the standing valve of the pump. If the side outlets at the casing head are closed so that no gas may flow from the well, pressure will gradually build up in the gas space within the well and in the oil sands immediately surrounding, which will operate to reduce the fluid level in the well.

IF NO gas is permitted to escape from the well, so that the gas pressure within, is maintained equal to that in the sands immediately about it, the fluid level in the well falls to that in the sand. If the pump is so placed that it is still well submerged, it develops a relatively low pressure approximating atmospheric pressure within the working barrel. Hence, the differential pressure between the sand and the pump is still as great as it would be if the gas were permitted to freely escape, at the casing head.

When the pump is at work, furthermore, there is a certain "drawdown" effect of the fluid in the well relative to that in the sand, which permits gravitational seepage to assist in bringing oil into the well, a condition not possible when a high fluid level is maintained. The writer has designed a double-acting pump operating on this principle[8], which strips the gas from the oil before it is taken into the pump for elevation to the surface, the gas being

8.—Uren, L. C., "Variables Influencing the Gas-Oil Ratio as a Measure of Production Efficiency," NATIONAL PETROLEUM NEWS, Oct. 19, 1927, pp. 73-78.

compressed and forced back into the free space above the oil surface in the well and thence back into the oil-drained space in the upper part of the sand. High-pressure gas thus maintained above the oil in the sand, bears down on the oil, developing a horizontal component of pressure which drives oil into the well.

Under elevated pressure conditions, the oil is maintained well saturated with dissolved gas so that its viscosity remains low up to the time that it is taken into the pump. It is believed that such a device would permit of more complete recovery of the oil and would conserve practically all of the gas in the reservoir sand.

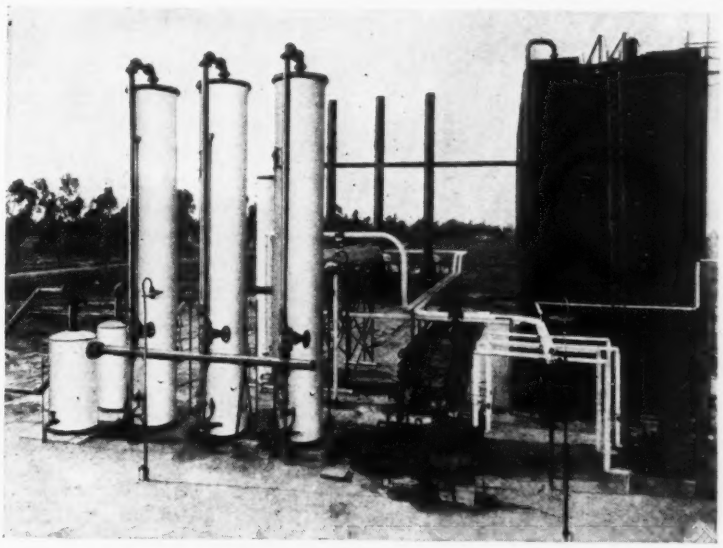
IT SHOULD be possible to operate a well that is still producing under high reservoir pressure with the aid of an ordinary plunger pump, by placing a back-pressure valve in the gas anchor immediately below the standing valve. This should be a spring-controlled valve which on the up-stroke of the plunger, regulates the flow of high-pressure oil through the standing valve to the relatively low-pressure space within the working barrel. The side outlets of the casing head remain closed or at least partially closed, so that but little high pressure gas is permitted to escape, except insofar as it may enter the pump in solution in the oil.

Under these conditions, the fluid level of the oil in the well would be maintained at or near the level in the sand, and as explained in the preceding paragraph, the "drawdown" effect developed by the pump would permit gravitational seepage to assist in moving oil into the well.

By such a method, a well that would normally be a flowing well, can be pumped with considerable economy in formational gas-energy consumption and with consequent increase in ultimate recovery. The back-pressure developed on the sands would, however, restrict to some extent the rate of oil production. A pumping well is more efficient from the standpoint of formational gas-energy consumption than either a flowing well or a gas-lift well," because in the pumping well, the formational gas is relieved of the burden of lifting the oil to the surface.

### Detrimental Effects of Sand in the Oil On Pumping Efficiency

The strata from which petroleum is secured, often consists of unconsolidated or only partially consolidated sands or sandstones which disintegrate under the influence of the gas and oil flowing through their pore spaces. Particles of sand thus detached from the main mass of the reservoir rock, are carried into the

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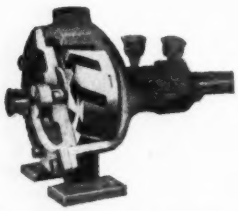

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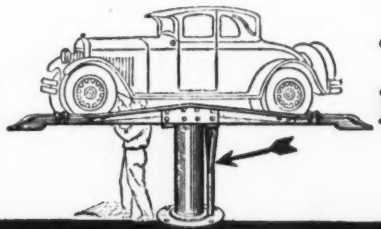

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well in suspension in the oil[9], and unless they have opportunity to settle to the bottom of the well, will eventually be taken with the oil into the pump.

In a pumping well, sand entering with the oil is detrimental from every point of view. If it finds its way into the pump, it rapidly abrades the working surfaces, and may accumulate in the oil passages so that movement of the oil through the valves is impeded or even entirely prevented, necessitating withdrawal of the rods, tubing and pump and cleansing of the latter.

If the sand accumulates in the well about the pump, it materially restricts the free access of oil from the reservoir rock to the well and to the pump. Sand should be excluded from a pumping well by every possible means.

Where the reservoir rock is of such a nature as to be productive of "float" sand, it is customary to place screen pipe in the well, but such screens as are employed are often only partially effective, so that in many fields, sand enters the well and must be handled with the oil by the pump. Another method of sand control often made use of by the producer, is that of maintaining a high fluid level in the well, the high static pressure so developed, tending to support the walls and prevent their disintegration. This practice, however, as has been shown in an earlier section of this article, tends to restrict the rate of oil production.

Any method or device, the use of which develops back-pressure on the productive sand, should be successful in reducing incursion of sand into the well. A smaller differential pressure between the sand and the well, leads to a lower rate of flow of the oil and gas through the pore spaces of the wall rocks, thus reducing the disintegrating effect of the moving fluids. Formation of enlarged cavities about wells within the reservoir sand would also provide a lower velocity of approach of the fluids, with consequently lower sand-carrying capacity.[10]

Though the various methods of sand control are partially effective, no method or device yet developed is capable of entirely preventing influx of sand into the well with the oil. Therefore, when dealing with fine-grained unconsolidated sands, provision must be made to take care of it either by separating the sand from the oil before it enters the pump, or by the use of styles or types of pumps designed to handle sand without abnormal wear and danger of clogging. Several devices are employed in con-

9.—The writer has discussed the causes and effects of sand accumulation in oil wells, in an earlier article of this series printed on pages 83-86 of the May 11, 1927, issue of NATIONAL PETROLEUM NEWS.

10.—See an earlier article of this series, printed in NATIONAL PETROLEUM NEWS, issue of April 27, 1927, pp. 67-77.

*Fig. 5—Reed-Yost anchor dump valve (Courtesy D. & B. Pump & Supply Co.)*

nection with plunger pumps and gas anchors, which cause the sand to settle from the oil into an accumulating chamber from which it may be automatically or occasionally flushed out. One of these, called an "anchor dump," illustrated in Figure 5, is attached to the lower end of the gas anchor and is designed to drop the sand out of the gas anchor as it settles below the standing valve of the pump. Other devices provide merely a settling chamber for the sand, with the expectation that the pump and tubing will be occasionally withdrawn from the well for cleaning.

IN SELECTING a pump that will be successful in handling sand in suspension in the oil, it is important that the design be such as will maintain a proper velocity of the fluid through it and up through the tubing to the surface. The carrying capacity of oil for sand in an ascending column of fluid varies as the square of its velocity; hence by constructing pumps with a flow channel of only slightly smaller cross-section than usual, the carrying capacity of the oil for sand will be greatly increased.

Enlarged recesses above the valves, causing a reduction in flow velocity or "dead" spaces about the flow channel through which movement of oil is sluggish, are conducive to settling of sand from the fluid at such points. Once taken into the pump, the fluid must be maintained in rapid motion until discharged at the surface.

A type of pump that has been particularly successful in handling sand, is the so-called "macaroni" or circulating pump, in which a cylindrical tube is used to actuate the plunger instead of sucker rods.[11] The oil flows to the surface through this tube, instead of between solid sucker rods and larger tubing. The smaller cross-section of the discharge tube provides a greater speed of ascent, so that the sand has little opportunity to settle. In addition, clean oil may be

11.—Maxwell, W. H., "The Successful Handling of Sandy Wells with Circulation Plunger Pumps," Oil-Field Engineering, Nov., 1926, pp. 65-66.


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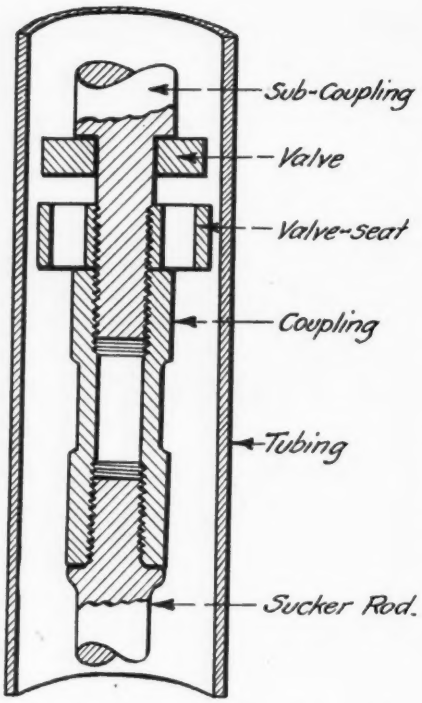


*Fig. 6—Mead assister for preventing sand from settling in the tubing. (After Sargent in "Oil-Field Engineering").*

circulated back into the well through the space between the hollow "rod" and the tubing which supports the working barrel. This clean oil provides lubrication for the plunger, so that it will be maintained free of sandy oil, and is added to the incoming oil from the well, diluting its sand content and giving the pump a greater volume of oil to work on so that the flow velocity and sand-carrying capacity of the fluid will be increased.[12] Oil carrying as much as 75 per cent of sand can be successfully handled with this type of pump.[7]

Another style of pump which seems well adapted to the handling of sandy oil, is the "fluid-packed" pump, which is provided with an unusually long and relatively loose-fitting plunger. In this style of pump, dependence is placed in avoiding plunger leakage, on the unmobility of oil maintained between the plunger and barrel rather than on accuracy of fit between the plunger and barrel. On account of the comparative absence of rubbing metal surfaces, abrasion of polished surfaces by sand in the oil is less troublesome than in an ordinary style of pump[7].

Scoring of the polished metal surfaces of the plunger and working barrel by the cutting action of sand particles which find their way in between, results in loss of proper clearance, with consequent abnormal oil leakage around the plunger. As a means of reducing this action of sand, there is some advantage in using a long working barrel, together with a plunger no longer than the length of stroke employed. This combination permits the plunger to operate without its upper end extending out of the working barrel, so that sand grains settling about the working valve, have little opportunity to find their way between the plunger and the barrel; and as the plunger is no longer than the stroke, any sand that may be dragged in between the two surfaces at the top will have an opportunity to escape at the bottom during the same stroke and will not score the polished surfaces by continued abrasion[6]. Another device designed to prevent sand from finding its way down between the polished surfaces of the plunger and the working barrel, consists of an extension on the upper end of the plunger, operating in an extension of the working barrel somewhat larger in diameter than the latter. The annular space between the extension plunger and barrel is tightly packed with a heavy grease which has the function of retaining any sand which may work down around the top of the plunger assembly, thus preventing it from finding its way down to the close-fitting section of the barrel and plunger.

Other devices that are designed for use in preventing settling of sand in the tubing are occasionally used. One of these is a disc-shaped valve that may be attached at intervals up through the tubing to the sucker rods, made to fit loosely in the tubing. (See Fig. 6.) These valves are lifted from their seats on the downstroke of the rods so that they sink through the fluid within the tubing with but little resistance. On the upstroke of the rods, however, the valves are pressed against their seats and assist in lifting the oil.

Sand is particularly apt to settle in the tubing and pump when some interruption in normal operation leaves the oil column stationary. When a gas-lock forms in the pump, for example, and no oil is forced through the pump and tubing, there is a likelihood of the valves becoming sand-bound. An interruption in power service will leave the plunger stationary, so that it, too, may become "frozen" in the working barrel by accumulated sand settled above it, perhaps necessitating simultaneous withdrawal of both the tubing and rods. As a precaution against "sanding of the pump" in this way, devices are available which release the oil from the tubing immediately above the working barrel when the plunger becomes "frozen" in the working barrel, permitting the sand-laden oil to drain back into the well.

Sand is likely to be particularly troublesome in clogging the pump if water is also present in quantity in the oil pumped. Oil wet sand tends to remain in suspension in oil and does not settle and "pack" so readily as does water-wet sand.

12.—Graser, F. A., "Circulating Plunger Pumps, Summary of Operations, California Oil Fields," monthly publication of the California State Mining Bureau, Vol. 11, No. 11, May, 1926, pp. 18-22.

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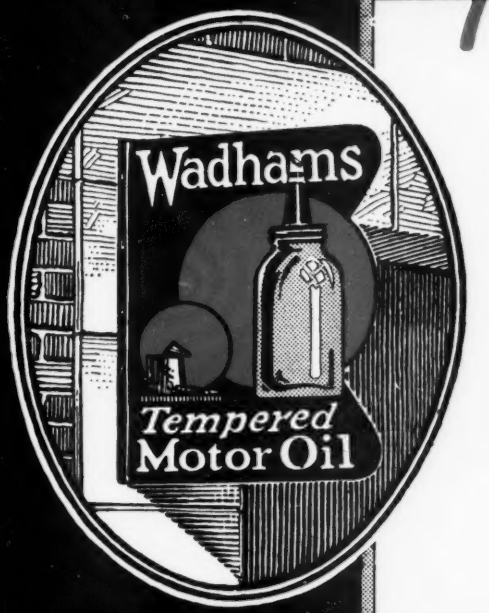


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# Response to Pressure Variation As Well as Volume Control Important for Gas Lift

By U. V. Thomas

ONE of the problems of the production engineer in flowing wells by the gas lift method is in accurately controlling the amount of gas admitted to the well.

In flowing wells by the gas lift system, gas under suitable pressure is introduced in various specific manners beneath the liquid level in the well, the gas mixing with the liquid and forming a light mixed column which rises to the surface. The action of such a gas lift system is uneven. At one time the gas may be more or less freely passing upwardly in the mixed column and consequently a given pressure will put more gas through the well than is desired. At other times conditions may be such that the gas is more or less trapped by the oil in the column, or temporary pressures may be developed in the well and then a greater temperature is temporarily necessary. However, if such greater gas pressure were constantly applied to the well, there would be great waste of gas during the times when the gas is flowing freely up through the mixed column.

The opinion generally prevails among production engineers that in connection with the producing of oil wells by the gas lift method, it is desirable to maintain a constant delivery of gas into any given well. That this can be accomplished is evidenced by the fact that several automatic devices for this purpose are used at the present time. However, it is becoming more generally recognized that a need exists for a device which in addition to accomplishing the regularity of flow, will accomplish a varying regularity with variations in direct proportion to and as a result of the natural well pressure fluctuations.

A simple and relatively inexpensive means with which to solve the pressure variation problem has been developed.

This control will regulate the feed of gas so that when a lesser pressure is required, the gas will be fed under a correspondingly lesser pressure and volume, and when a higher pressure is necessary the pressure and volume will correspondingly increase.

The solution, therefore, quite obviously lies in automatic pressure and volume regulation of the introduced flowing medium and in order to explain just how the device differs in operation from instruments now in general use, we must consider the effect of maintaining a constant differential pressure at an orifice in the delivery line to any given well. This does not imply that a constant volume of gas is passing, the volume being constant only so long as the static or line pressure remains unchanged and it will be readily seen that if the same differential is maintained, the volume of gas will vary as the static pressure varies. Since well pressure variations are transmitted to and are directly reflected in the delivery line pressures, it naturally follows that the volume of gas into the well will decrease or increase as the well pressure rises or falls respectively.

The constant differential type controls will only admit sufficiently more or less gas to maintain the constant differential for which they are set and because of the comparatively slow reaction to well pressure variations, they permit the introduction of considerably more gas than is necessary for efficient operation and do not supply enough gas when the well pressure is high and an increased volume is desired.

Obviously, if a finer degree of control adjustment can be automatically provided so as to permit varying well pressures to be met almost instantly with exactly the proper volume of introduced gas to effect an almost immediate predetermined proper relationship between well pressure and the flowing medium pressure such a condition approaches the ideal. In other words, regardless of the frequency of well pressure variations, the same predetermined pressure relationship can be maintained constantly over any period of time thus effecting a smooth, steady application of the gas lift process to any well, under all conditions and with the need of personal attention eliminated.

U. V. THOMAS

*Mr. Thomas has been vice-president of the Natural Gas Equipment Co. since 1924, however, his activity with this company did not start until September, 1925. Prior to that he was with the Union Oil Co. of California in numerous capacities in both California and Colorado, mainly engaged in natural gas and gasoline work.*

*Mr. Thomas started with the Union Oil Company of California in the Santa Maria Fields in 1919 where he served until 1921. At this time he went with the Apex Engineering Corp. as sales engineer and was their representative in Wyoming and later in Texas.*

This result has been secured with the new type of control which can be applied to any gas lift well. A few of the outstanding advantages of this device as compared to the single differential control type and the manual header systems are set forth:

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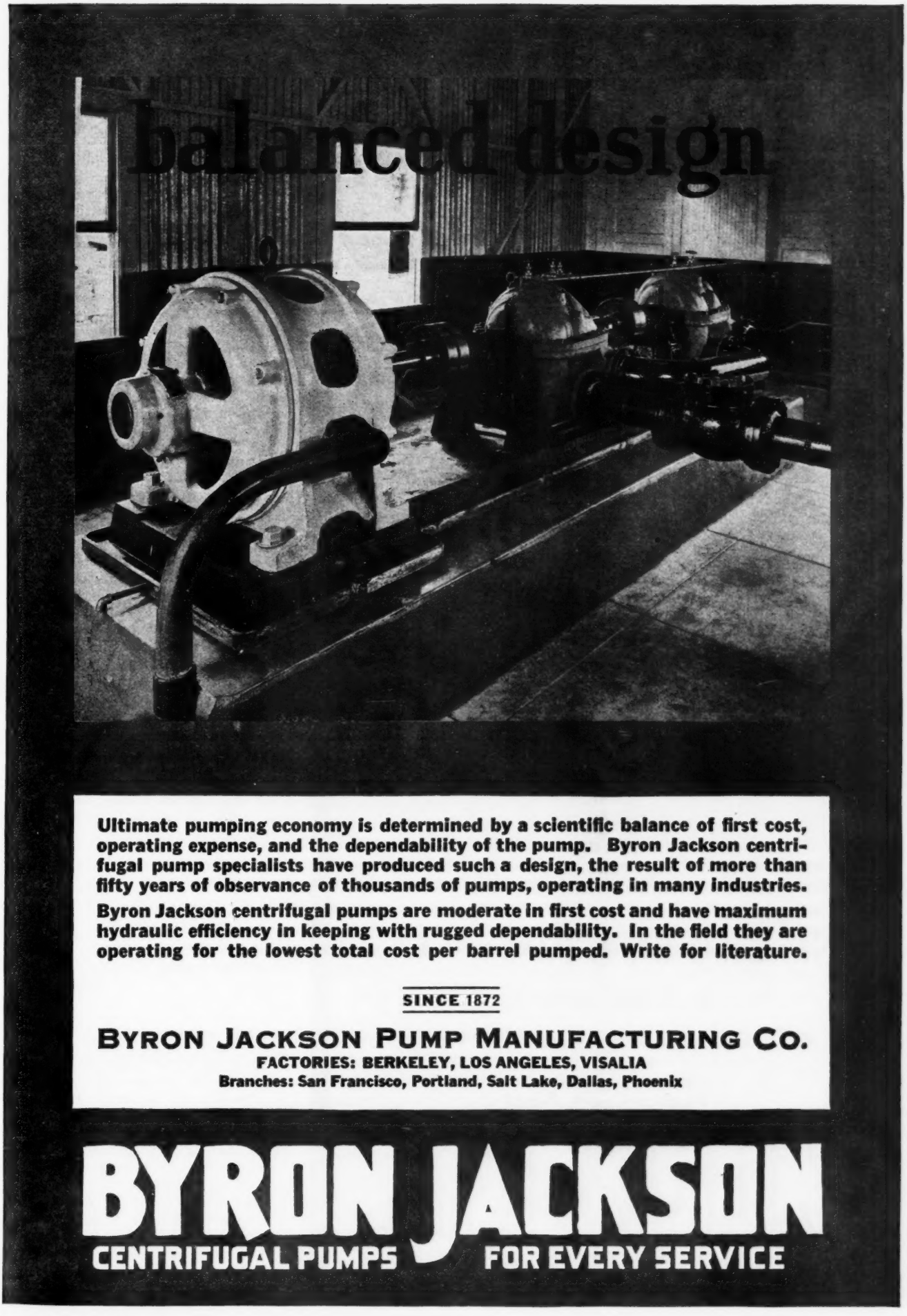


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A more detailed description of the control and its operation with reference to the accompanying sketch follows:

In the drawing let 10 designate the main gas pressure line to which gas is fed under suitable pressure, valve 11 being provided for shutting off the gas pressure whenever desired and thus putting the system completely out of operation.

At some point in pipe 10 there is an orifice of adjustable size, such as for instances is formed by valve 12. At opposite sides of the adjustable orifice of valve 12, two pipes 13 and 14 lead off to a pressure regulator 15. In the particular regulator here illustrated, spring 17 presses downwardly on diaphragm 16 to oppose the higher pressure which is applied to the under side of the diaphragm through pipe 13. The lower pressure is applied through pipe 14 to the upper side of the diaphragm. The pressure regulator 15 operates a valve 18. The action of regulator 15, operated by the differential between the pressures at opposite sides of the orifice, is at all times to maintain a predetermined pressure difference at the orifice and thus to maintain, for any given size of orifice, a constant flow of gas through the orifice to the well.

Such a constant flow, however, is not fully suited to the requirements of gas lift, for the reasons stated above. Therefore a further control has been incorporated into this system which acts to modify the action of pressure regulator 15 in such a manner that if the back pressure from the well decreases, the feed of gas under pressure to the well is correspondingly cut down, and if the back pressure of the well increases, the feed of gas to the well is correspondingly increased. This we do in our system by providing, between pipes 13 and 14, a by-pass pipe 30 in which we place a small pressure regulator 31 and also the manually adjustable valves 32. This pressure regulator 31 has a diaphragm 33 to which the pressure is applied at one side only, an adjustable spring 34 exerting pressure against the opposite side. Gas pressure is applied to diaphragm 33 through pipe 35 under control of valve 36 from pipe 14. Thus it will be seen that pressure at the outlet side of orifice 12 is applied to diaphragm 33 and it is thus the variation of the back pressure from the well that controls the passage of pressure between pipes 13 and 14 through by-pass pipe 30.

If for any reason the back pressure from the well increases, tending to decrease the differential pressure between pipes 13 and 14, this decrease of differential pressure tends

Made From Selected Crudes

Golden Clear Color

Special Refining Process

Smooth Tough Film

# SHELL MOTOR OIL

# ANTI-CARBON

## Smooth tough film

Shell Quality Controlled

The Year-Round Oil

**The degree of protection afforded to moving metal parts by any motor oil is determined before it leaves the refinery . . . Shell Motor Oil, because it is made from selected crudes by a low-temperature, low-pressure process, forms a smooth, tough film, which stubbornly resists heat and friction for unusually long periods.**

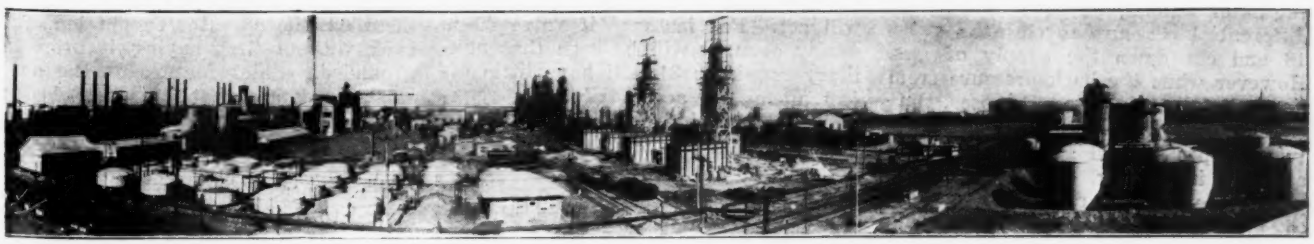
***Jobbers and Dealers!***

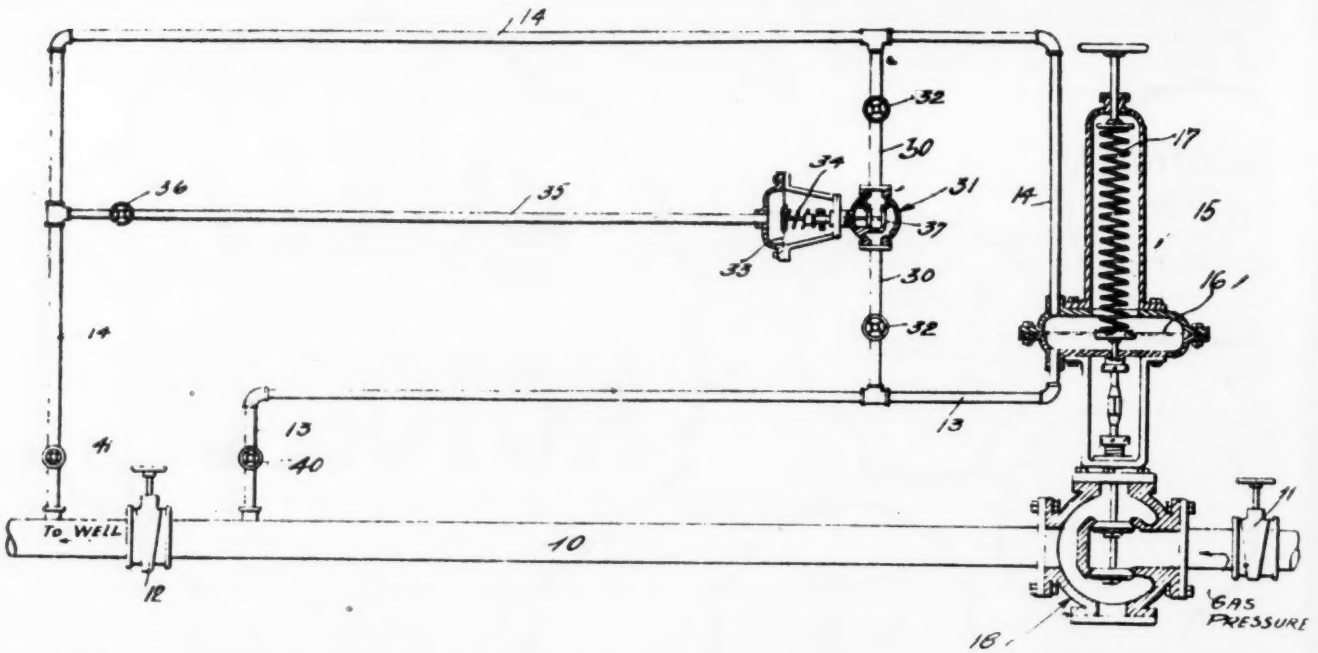
**A uniform, high standard of quality and an established reputation among motorists combine to aid you in building up a permanently profitable business.**

*Your inquiry regarding Shell Motor Oil and open franchises is invited*

ROXANA PETROLEUM CORPORATION
SHELL BUILDING · · · *SHELL CORNER* · · · SAINT LOUIS

**The Shell Refinery at Wood River, Illinois**






immediately to operate main regulator 15 to increase the pressure at the inlet side of orifice 12 to maintain the differential pressure constant and to maintain a constant flow. However, it is desired under such circumstances to further increase the pressure at the inlet side of orifice 12 so as actually to increase the gas flow through the orifice to the well whenever back pressure from the well rises. Thus in this system whenever the pressure at the outlet side of orifice 12 increases, the correspondingly increased pressure on diaphragm 33 causes regulator 31 to open the passage through bypass pipe 30.

The opening of this passage allows fluid pressure to flow between pipe 13 and pipe 14 thus further decreasing the effective differential pressure which is applied to main regulator 15. Remembering that the main regulator 15 opens its valve 18 just in proportion as the applied differential pressure decreases, it will thus be seen that the action of regulator 31 is to so modify the differential pressure applied to regulator 15 as to make that regulator open more widely, and thus supply a higher gas pressure to the orifice 12 in predetermined proportion as the back pressure from the well increases.

The opposite action takes place if the back pressure from the well decreases. Such decrease tends to increase the differential pressure at opposite side of orifice 12 and to increase the differential pressure applied to main regulator 15, the main regulator tending on such increase of differential pressure to close its valve 18 and cut down the supply of gas. However when the back pressure from the well falls, regulator 31 closes, thus cutting down the flow of pressure between pipes 13 and 14, and thus relatively increasing the differential pressure which is effectively applied to main regulator 15. Under this relatively increased differential pressure, the main regulator 15 operates to close its valve 18 still further so as to decrease the supply of gas. Thus the action of pressure regulator 31 modifies the action of main regulator 15 so that instead of feeding to the well the constant supply of gas, that main regulator then acts to feed less gas to the well as the back pressure from the well falls, and feed more gas to the well as the back pressure from the well increases.

IT WILL be noted that the action of main regulator alone, depends on relative variation of the pressures at opposite sides of the orifice 12, tending to keep the gas flow constant under variations of either the initial gas pressure, or the back pressure from the well, or both. The modifying action of auxiliary regulator 31 however, depends on variation in back pressure alone thus modifying and controlling the feed of gas in direct response to the instant needs of the well and unaffected by variations in the feed pressure.

The action of the entire system is capable of adjustment to suit varying conditions. Adjustment of spring 17 of the main regulator controls the normal differential pressure which will be maintained at opposite sides of the valve orifice 12. Adjustments of the orifice 12 regulate the amount of gas fed to the well under any normal differential pressure. Adjustment of valves 40 in lines 13 and 14 controls the speed at which main regulator 15 will act. For instance if valve 40 is nearly open, it will be seen that auxiliary regulator 31 will have little effect upon the action of main regulator 15, with the result that the main regulator will act substantially in its ordinary manner. But with any given setting of valve 40, the regulatory effect of regulator 31 increases the relative diminution of gas supply when the back pressure from the well falls and increases the relative augmentation of gas supply when the back pressure from the well rises. Thus the system may be completely adjusted to feed gas to the well under any predetermined normal or average pressure and further adjusted to increase and decrease the gas feed, under the circumstances described by any predetermined relative amount.

This control may be adjusted to supply gas to a well in any manner which may be the most efficient. That is, this control is not a device which has a fixed function such as a differential regulator, although it may be set to perform as such, and when so adjusted, will maintain any given differential within ½-inch of water variation.

The control is always in operation, regardless of how it is desired to operate the well. It is always in readiness to respond to pressure variations and will absolutely prevent the well from dying. It will enable the user to flow his wells individually giving due consideration to each well's peculiarities.

---

**A. Y. McDonald Mfg. Co., Dubuque, Ia.,** manufacturer of oil field and bulk station equipment, has published bulletins on the McDonald static grinding device and on its auto wash valve.

The grounding device eliminates the danger caused by static while loading truck tanks by properly grounding the truck tank. When the device is once installed, the operator cannot load the tank without first having it properly grounded. Chief feature of the auto wash valve are that it is self-closing and can be locked to throw a spray or mist on the car, eliminating the necessity of being held open in the hand while in use. The valve can be furnished to throw full stream, if desired.

# Sun No. 87

## A New and Improved Bright Stock

excelling in quality, uniformity and performance all lubricants on the market produced for the same purpose.

Never before has *any* refiner produced a distilled Bright Stock—combining purity, low carbon and low cold test of distilled oils with a

## High fire test of 600

*Other specifications:*

VISCOSITY 150 to 175 at 210° F. ✓ LOW COLD TEST
COLOR 7 ✓ CONRADSON CARBON BELOW 1%
GOOD DEMULSIBILITY ✓ PRICED RIGHT

No. 87, being a wholly distilled product, contains no non-lubricating factors. Any resultant oil can truthfully be sold as a 100% lubricant.

*WRITE for full information and mixing formulas*

# SUN OIL COMPANY
## PHILADELPHIA

Quality

REFINING SCIENCE MODERNIZED

SHARPLES PROCESS OILS

| | | |
|---|---|---|
| Gravity | 28½-29 | 29-29½ |
| Flash | 440 | 430 |
| Viscosity | 75 @ 210<br>650 @ 100 | 60 @ 210<br>385 @ 100 |
| Color | 6 plus | 5¾ |
| Pour | 25/30 | 25/30 |

Guaranteed 100% PURE PENNSYLVANIA OIL

FRANKLIN CREEK REFINING CORP.
Franklin, Pa. Permit 34

*For Samples and Quotations*

W. H. DAUGHERTY & SON REFINING CO
Permit 30 Petrolia, Pa.

SALES OFFICES, 114 FIFTH AVE., NEW YORK

*"Kwik-Flo"*
*"Fast-Flo"*
*"Max-Flo"*

FAUCETS!
FAUCETS!
FAUCETS!
FAUCETS!
FAUCETS!
FAUCETS!

*"Push-Pul"*
*"Skrew"*
*"Rench"*

STEEL DRUM ACCESSORIES CORP.

BUFFALO, NEW YORK

## *Letter to the Editor*

Mr. Paul Truesdell,
NATIONAL PETROLEUM NEWS,
Cleveland, Ohio.

Dear Sir:

I am much interested in the article appearing in your October 26 issue, page 23, on a method of testing the knock characteristics of fuels. The knock testing equipment described in this article is one designed and built by our own laboratory. We have built 30 of these machines of which four are in use by our own laboratory, two are in use in Canada, four have been shipped abroad and the others are in use by oil companies, automobile manufacturers, etc., in the United States.

I thought you might be interested to know that this equipment is not a special development of the Marland Refining Co., but is a commercial instrument of which a considerable number are in use.

Yours very truly,
(Signed) Graham Edgar.
ETHYL GASOLINE CORPORATION.

---

**Mathewson Machine Co., Quincy**, Mass., which manufactures the Roy portable servers for oil, grease and alcohol for the Roy Mfg. Co., has off the press a bulletin describing these servers for filling stations and garages.

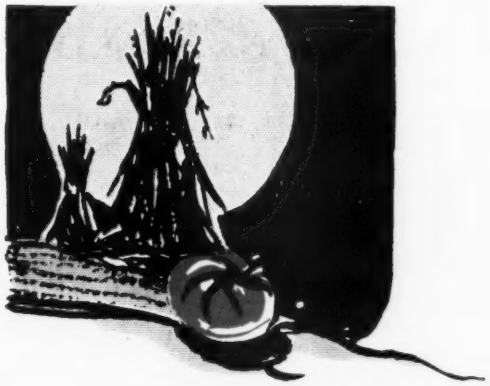
Maximum efficiency is claimed to be the chief feature of these new servers. The device is a steel welded tank on rollers and can be moved easily about. The grease server will carry 100 pounds and can be refilled through a removable head. An automatic register on the head guarantees accuracy of the quantity of grease delivered, the bulletin claims. It is simple, clean, efficient and saves time.

The oil and alcohol servers are much the same in appearance, and are claimed to be improvements over the old can-or-bottle method of delivery. Alcohol may be put into radiators in any quantity without danger of any dripping and the hazard of leaking barrels is eliminated.

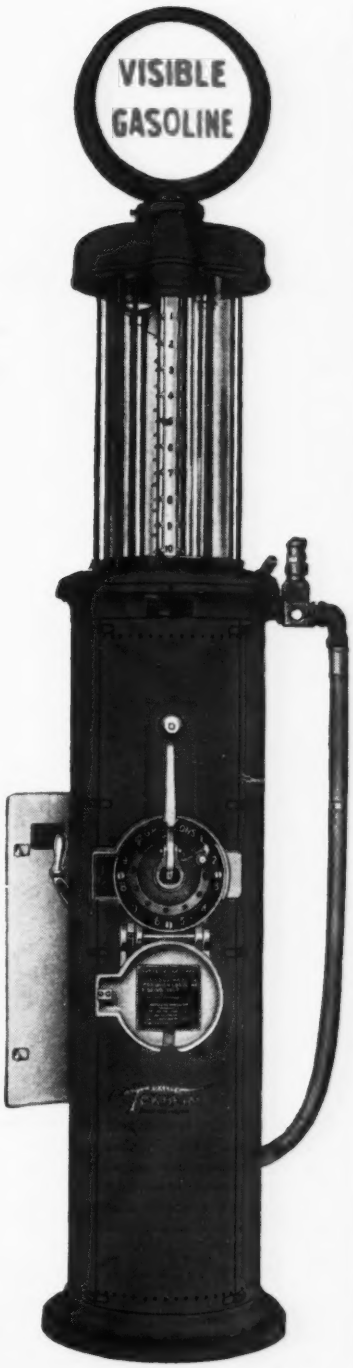
All servers are equipped with hose which delivers the goods into the customer's car in much the same manner as gasoline is dispensed.

---

**Walworth Co., Boston, Mass., manufacturer** of iron, brass and steel valves, has appointed James E. Degan Co., Detroit, Mich., wholesaler of steam-fitting and mill supplies, as distributor of Walworth valves. These valves are for steam, water, gas, air or oil lines.



# harvest time is Every day




DON'T think that harvest comes but once a year. In the filling station business there is a harvest awaiting you every day—a harvest of dollars and cents—a harvest of added business and profits.

But don't think that the harvest is yours for the hoping. It depends on your ability to render service to your customers—to satisfy their requirements for "good gas" and good service—up-to-the-minute service—the kind that requires up-to-the-minute equipment.

Tokheim can help you right there. Tokheim Cut 600-605 Visible Gasoline Pumps are built for super-service requirements.

Write today for full information. Get your share of the day-by-day harvest that other Tokheim users enjoy. Please address Department "M".

THE TOKHEIM OIL TANK AND PUMP COMPANY
FORT WAYNE, INDIANA

TOKHEIM
*Master Control*
VISIBLE GASOLINE PUMPS

# Jobbers, Dealers Forget Competition Overcoming Oil Buyer's Lethargy

Staff Special

CHICAGO, Ill., Nov. 5

COOPERATIVE advertising by competitors, all catering to the same market in the same town, is a departure in publicity recently used in Quincy, Ill., by the Armould Oil Co., and the Richardson Lubricating Co., together with four oil burner companies. These business men did not consider their competitors so much of an obstacle in the way of getting business as the public's forgetfulness. So they joined hands to break down popular lethargy —their big common competitor.

With a six-column, 18-inch advertisement in Quincy daily papers, these six companies started an advertising campaign in early September, with the glaring caption "What about your heat this winter?"

Pictures of snow covered houses and trees, overcoated people and frozen automobiles, appearing in a daily paper in September is enough to attract attention, especially if it is a warm September. But the advertisement went on to say:

"Most years you need heat in September. Every year you need it in October. No coal for this fall and winter season has yet been taken from Illinois mines. It is high time to think!"

At the time the first advertisements were appearing the statement about conditions in the Illinois mines was conservative. Not only had no coal been taken from the ground this season but it looked very much as if none would be. That situation has changed since then. The labor question involved has been settled and Illinois mines not at work are idle for other reasons than the perennial strike.

"What are you going to do about it; continue to 'take a chance'; or do as so many others are now doing—BURN OIL? Clean, wholesome, efficient, dependable, economical, carefree heat," the advertisement continued.

At the bottom of the first advertisement as all others, six firm names appeared; Ernst Plumbing & Heating Co., distributors of Oil-O-Matic oil burners; Pure Ice Co., distributors of Quiet May Oil Burners; Wachter Sales Co., distributors of Kleen Heet Oil Burners, and Gunther Hardware Co., distributors of Quaker Oil Heaters, besides the Armould Oil Co., and the Richardson Lubricating Co.

C. H. Armould, president of Armould Oil Co., in a letter to NATIONAL PETROLEUM NEWS said, "The idea of cooperative advertising on this subject seems to me to be worth passing along to the industry." Mr. Armould does not claim credit for originating the idea, but inclosed the "ad" copy that appears herewith.

Just a Few More Weeks
And the Home Fires Should Be Burning!
Are You Ready
There is still time to equip your home or business to burn fuel oil. It is the modern fuel and will be as great an improvement as when you stopped burning kerosene lamps and put in electric lights. It will give you an even, automatically controlled temperature day and night. It will remove all coal dust, soot, smoke and ashes from your premises. It will avoid all the unpleasant tasks of furnace tending. It will be a revelation to you.
How Many Would Drive Automobiles If They Had to Be Fired With Coal?
Heat for your home is just as easily procured and just as simply controlled as is the power for your car.
These Dealers in Oil Burning Equipment are ready to give you prompt service installing Oil Burners in your furnace or boiler.
ERNST PLBG. & HTG. CO.
PURE ICE CO.
OIL-O-MATIC OIL BURNERS
QUIET MAY OIL BURNERS
WACHTER SALES CO.
KLEEN HEET OIL BURNERS
OIL BURNING STOVES AND HEATERS
GUNTHER HARDWARE CO.
QUAKER OIL HEATERS
These Fuel Oil Dealers will assure you an ample supply of Fuel Oil or distillate at low prices.
ARMOULD OIL CO.,
RICHARDSON LUBRICATING CO.

Let Fuel Oil Do Your Firing This Winter
Turn the coal bin into a playhouse for the children.
Throw away the coal shovel and ash cans.
Enjoy the future winters with the modern, carefree, automatically controlled heat.
WINTER
There is still time to equip your home or business to burn fuel oil. It is the modern fuel and will be as great an improvement as when you stopped burning kerosene lamps and put in electric lights. It will give you an even, automatically controlled temperature day and night. It will remove all coal dust, soot, smoke and ashes from your premises. It will avoid all the unpleasant tasks of furnace tending. It will be a revelation to you.
How Many Would Drive Automobiles If They Had to Be Fired With Coal?
Heat for your home is just as easily procured and just as simply controlled as is the power for your car.
These Dealers in Oil Burning Equipment are ready to give you prompt service installing Oil Burners in your furnace or boiler.
ERNST PLBG. & HTG. CO.
PURE ICE CO.
OIL-O-MATIC OIL BURNERS
QUIET MAY OIL BURNERS
WACHTER SALES CO.
KLEEN HEET OIL BURNERS
OIL BURNING STOVES AND HEATERS
GUNTHER HARDWARE CO.
QUAKER OIL HEATERS
These Fuel Oil Dealers will assure you an ample supply of Fuel Oil or distillate at low prices.
ARMOULD OIL CO.,
RICHARDSON LUBRICATING CO.

## Shell Team Wins Cup In Safety Contest

LOS ANGELES, Nov. 3.—Fourth Pacific Coast Safety conference and Fifth Annual California Industrial First Aid meet in Los Angeles, Oct. 24-28, came to a close Friday night with a banquet at the Biltmore, at which time prizes were awarded to winners of the first aid contest at the California state armory, Oct. 27 and 28.

First honors in the petroleum division went to the Shell Co. entry. Members of the team were presented with a perpetual silver cup, to be retained permanently; bronze medals, Red Cross certificates, and $10 gold pieces each. Although the Shell Co. took first honors in the petroleum division, first honors for the entire two-day meet, went to the Pacific Gas and Electric Company's team from the San Rafael plant. Third prize for the meet, a silver cup and $15 gold piece to each member of the team, was awarded the Richfield Oil Company's gas department team. Standard Oil Company's Richfield refinery team won fourth place and the members were given $5 gold pieces.

During the Monday afternoon session, "Safe Handling of Flammable Materials," a paper, was read by G. F. Prussing, safety department, Union Oil Company of California. On Tuesday afternoon, Robert E. Donovan of the Standard Oil Company of California, read a paper on, "Tank Fire Tests."

## Water with Panhandle Oil Averages 37%

HOUSTON, Nov. 3.—A survey of water encroachment covering approximately half the wells in the entire Texas Panhandle indicates they are producing roundly 37 per cent water with the oil lifted. This compares with 23 per cent water production, March 1, last.

Detailed figures on water and oil lifted on this survey by counties, follow:

| County | Barrels Oil | Barrels Water |
|---|---|---|
| Hutchinson | 46,252 | 29,529 |
| Carson | 4,041 | 560 |
| Gray | 759 | 339 |
| Wheeler | 558 | 164 |
| Totals | 51,610 | 30,592 |

Total daily average production for the Panhandle in the week ended Oct. 22, last, for comparative purposes, by counties, was; Hutchinson, 65,706 barrels; Carson, 8,076 barrels; Gray, 13,497 barrels; Wheeler, 1,370 barrels; Potter, 26 barrels; Moore, three wells still shut in.


*How do YOU clean your Oil Drums?*

# The Perfection Vacuum System

Every oil jobber that wholesales Lube oils in drums has the problem of cleaning the oil drums that are returned. The Perfection Vacuum System provides a very efficient means for doing this at a very considerable saving in time and labor.

The Perfection Vacuum Pump has fourteen years of satisfactory service behind it. Every pump is guaranteed to produce at least twenty-five inches of vacuum.

This vacuum system, as illustrated, can be bolted to the floor or moved around as desired. It is equipped with a ¼ H. P. motor and can be connected up to any light socket.

Write for further information and prices.

**Perfection Manufacturing Company**
**2194 East Hennepin Avenue Minneapolis, Minn.**

## Oil And Grease Formulas

200 formulas, have been prepared in a simple, non-technical style by Forrest A. Hoff.

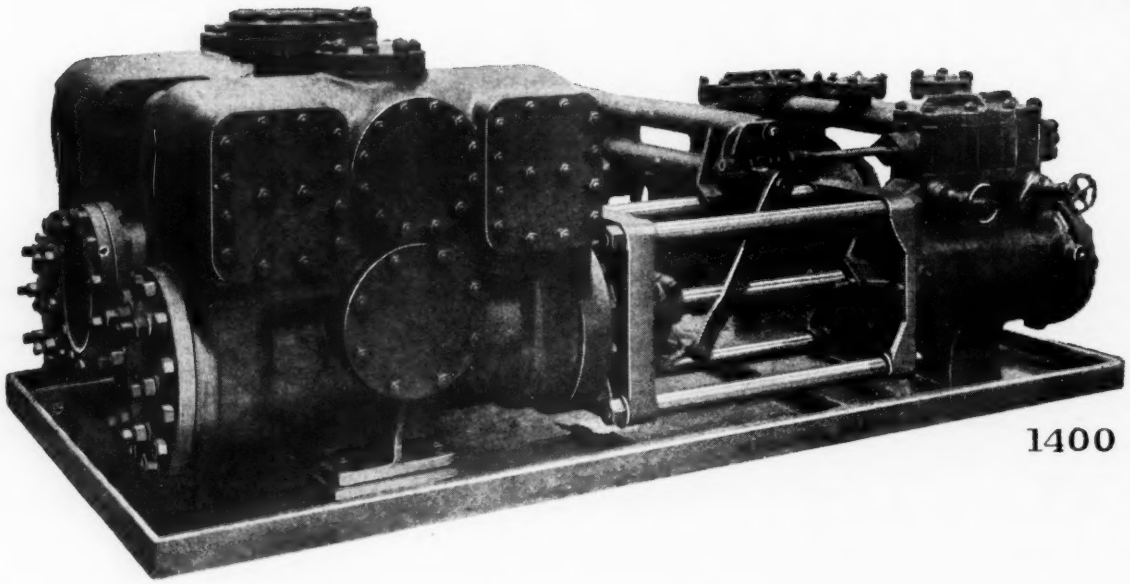
They are of value to the refiner, jobber, compounder, broker and lubricating engineer.

Just attach your check to this ad and return it to us now. $15 is the reasonable cost of all this information. Synopsis sent upon request.

**National Petroleum News**
**1213 West 3rd St. Cleveland, Ohio**

# TRANSIT

# Pumping Out Pumps



1400

PUMPING out pumps are used to remove the tar and residual from various types of oil stills. This can be, and oftentimes is, one of the meanest jobs around a refinery. It requires a special pump to do this work successfully.

TRANSIT Block Valve Pumps have large rectangular valves as large as your feet, but no guards, no stems, no springs, nor separate seats to loosen by reason of the expansion of the fluid end from the hot tar. The valve seats are integral with the fluid cylinder casting. There is no trouble from expansion regardless of the heat of the fluid pumped.

Removing any valve chamber cover gives access to both intake and discharge valve, for inspection or removal.

These pumps are the solution of the pumping out problem, and they are low in price.

*Descriptive matter on these pumps on request.*

Representatives

FRICK-REID SUPPLY COMPANY
Tulsa, Okla., or any store.

ASSOCIATED SUPPLY COMPANY
Los Angeles, San Francisco, Bakersfield, Fellows

E. L. WILSON HARDWARE CO.
Beaumont, Texas

**NATIONAL TRANSIT**
**Pump & Machine Co.**
**Oil City Pa.**

DISTRICT OFFICES
NEW YORK PHILADELPHIA PITTSBURGH
CLEVELAND HOUSTON TULSA DENVER

Representatives

THE GLOBE SUPPLY & MACHINERY CO.
New Orleans, La.

F. C. RICHMOND MACHINERY CO.
Salt Lake City, Utah.

MORTON McL. DUKEHART & CO.
Baltimore, Md.

REEVES & SKINNER MACHINERY CO.
St. Louis, Mo.

# Continuous Tube Heaters Have Many Advantages Over Shell Stills

By Paul Runge

***Written exclusively for National Petroleum News***

MODERN petroleum refining, a comparatively young industry, has passed through perhaps the greatest number of recent radical changes due to invention and dire necessity of any of the important industries.

The development of distillation equipment is perhaps one of the most remarkable steps in industrial progress and has been accomplished within a very brief period of time. The old cheese-box still was the pioneer of petroleum distillation equipment. Although still in use in some plants, its use is becoming less, due to the installation of more efficient types. Its followers could not at first be easily convinced that products of equal grade could be made from a cylindrical still. The demand for higher efficiency led to the introduction of the horizontal still which was the forerunner of the continuous still of the same general type.

The high fuel consumption, the large percentage of idle time, the possibility of greater throughput and the saving to be gained by utilizing spent heat, led to the introduction of continuous distillation.

The increase in competition and the need of further reducing costs has made it necessary to look for a still more efficient method and the answer to this has been the development of the continuous tube heater.

FAD or preference no longer holds a place in the choosing of distillation equipment. The industry has passed the stage where refineries are constructed with equipment to satisfy one man's whims, but has instead become a pure and simple question of investment and returns on the capital invested and upon this basis the tube still has a distinct advantage. Its position, consequently, is becoming more important every year, the reasons for which will be explained further on.

Except for isolated uses, its general adoption is only a question of time and the overcoming of a small amount of prejudice which still lingers. All new refineries and new installations in old plants, all replacements due to obsolescence are of the continuous tube type.

Although the tube heater has been in use for about 15 years, its general use in the refining of petroleum did not begin until comparatively recently. Its first use was in California for dehydrating crude. Its saving of fuel and steam soon was recognized with the result that considerable experimental work was started.

Because of the small amount of reliable data obtainable upon velocities and heat transfer, the development of the tube heater was very slow in the beginning. At that time refinery engineering data was held very sacred and only the larger companies which were in a position to finance experimental work were fortunate enough to have any definite data upon the merits of the tube still.

ENGINEERING data upon steam power plants has been very thoroughly worked out and tables covering same may be had by any one interested enough to look them up, but due to the greater number of complexities met with in the refining of crude oil, nothing of value is obtainable for general information and furthermore, tables for one type of crude are not reliable for a crude with different characteristics.

With the development of the tube heater the complicated problem of continuous fractionation had to be solved. Before any satisfactory towers were found a single cut was taken from the crude, treated and steam distilled. The first towers were only partially successful and more or less rerunning was necessary, there value being measured by the amount of rerunning required. Modern types of fractionating equipment have practically eliminated rerunning and cuts may be changed to satisfy seasonal market requirements.

The use of the continuous tube heater, at first restricted, has reached out into perhaps every type of equipment. At first used only for dehydrating heavier crudes, its use has spread until today it is used for refining both naphthenic and paraffine base crudes.

A NUMBER of the most popular cracking processes are of the continuous tube type and a number of the shell type use a tube heater in conjunction.

The last field to be invaded by the tube still is the refining of crudes for cylinder stocks where it gives better results than was expected. The number of completions, and orders for new installations in the Pennsylvania field where refiners are especially proud of their crude and its products, shows very clearly what may be expected. Vacuum distilla-

*PAUL RUNGE*

*Mr. Runge is a graduate of the University of Pennsylvania. Soon after leaving school he entered the employ of the Standard Oil Co. of New Jersey with the object of learning the theory and practice of all phases of the refining industry. After leaving the Standard of New Jersey, Mr. Runge spent about 10 years in the employ of the following companies.*

*Warner-Quinlan Co. as night superintendent.*

*New England Oil Refining Co., operating and construction.*

*M. W. Kellogg Co., sales, construction and operation of Fleming and Cross cracking plants.*

*"I am now with a company which controls two patents on refining which after further development, will be placed on the market", says Mr. Runge. He has had considerable experience with tube stills of all capacities and with tubes ranging in size from three-quarters-inch to 12 inches.*

## Professional Card Directory

**McCARRON and ROSENBAUM**
*Attorneys and Counsellors at law*
Specializing in all branches of Corporation and Commercial Law—Reorganization and Financial Consultants. Correspondence Solicited and Held in Confidence. Trial Practice in all Courts, State and Federal.
Guarantee Title Bldg.—Cleveland, O.

**S. F. SHAW**
*Consulting Engineer*
301 Terrell Road San Antonio, Texas
Organization of Air—Gas Lift Departments and Training of Engineers for this work.

L. G. Huntley J. R. Wylie, Jr.
Shirley L. Mason
**HUNTLEY & HUNTLEY**
PETROLEUM GEOLOGISTS AND ENGINEERS
Frick Building PITTSBURGH, PA.

**SAVE REPAINTING—** *clean with* **OAKITE**

CLEAN, good-looking storage tanks are a business asset.

But instead of repainting, many oil concerns have reduced substantially their repainting costs by cleaning equipment the Oakite way. For Oakite materials remove every bit of discoloration, oil, dirt and weather stains. Makes old paint look like new.

Tell us your problems or write for booklet. No obligation.

*Oakite Service Men, cleaning specialists, are located in the leading industrial centers of the U. S. and Canada.*

Oakite is manufactured only by
OAKITE PRODUCTS, INC.
42C Thames St., New York, N.Y.
*(Formerly Oakley Chemical Co.)*

**OAKITE**
*Industrial Cleaning Materials and Methods*


tion is also successfully utilizing the tube heater.

A rather unusual feature in connection with the tube heater is that every item in connection with it will show a saving. A list of savings which are made possible in connection with the tube heater could be tabulated as follows:

**Smaller Investment For Site**

Smaller cost of tube heater.
Less idle time.
Financial—
Smaller repair costs.
Fewer operators required.
Greater efficiency.
Operating—
Greater flexibility—
Greater safety—

IN CONSIDERING a site for the construction of a refinery, such items as cost of property, freight rates and markets must all be considered. In many instances a logical site can not be obtained, due to a prohibitive price. The saving made possible through the installation of tube heaters may be the difference between a refinery with a large number of shell stills, in a poor location or a plant with a few tube heaters in a more desirable location.

The space necessary for the construction of a continuous tube heater requires an average of one third that needed for the construction of a battery of continuous shell stills and about one fourth the space where batch distillation is practised.

**Smaller Cost of Tube Heater**

Considering the investment for stills on the basis of 1,000 barrels per day throughput, a fair cost of a continuous tube still would total in the neighborhood of $45,000, where as a battery of continuous stills of the horizontal type would cost $65,000 which represents a clear saving of $20,000. As the daily capacity increases, the saving becomes proportionately greater.

**Less Idle Time**

The difference in idle time between the two continuous methods is not as great as between the horizontal continuous and the batch methods. A distinct saving of time is shown, however, in connection with repairs. Perhaps the most costly shut down in connection with cylindrical stills is to repair a still bottom, the corresponding repair on a tube heater would be to replace a tube.

With good supervision and proper preparation the delay caused by the above repairs in the case of tube heater is measured in hours where as with cylindrical stills it is measured in days. A new tube can be put in by the average operating crew without the need of extra labor whereas, especially in smaller plants, it is necessary to look outside of the plant and often a considerable distance away for men capable of doing proper boiler maker work necessary in shell still repairs, which greatly increases the cost and idle time.

**Smaller Repair Costs**

In view of the above it may readily be seen that plants operating tube heaters have a distinct advantage in that the number of repair men can be reduced, practically all boiler making work being eliminated and general repair work can be handled with proper supervision by the average pipefitter using the operators as helpers.

**Fewer Operators Required**

Common mistakes in many plants is operating stills with too few men. Allowances should be made for operating troubles. Where too few men are used, small troubles which would under ordinary conditions not cause any interruption in operations, may wind up by becoming serious. In plants operating a single tube heater and using oil as fuel, one man can operate the still under perfect operating conditions, but where trouble is encountered one alone would be helpless.

One man used as a helper could take his gravities every hour and at other times could be looking after lubricators or pumps or other small routine jobs and be available at the still if needed. Where more than one still is in operation the problem is simplified as one man could act as fireman for three stills and the operator would be free to look after the general operations.

When coal is used as fuel, two men are needed for operating a still of practically any capacity, whereas with horizontal stills at least three men are required and with greater throughputs more will be found to be necessary.

**Greater Efficiency**

PERHAPS the principal reason for the advancement of the tube heater is its possibilities of steam and fuel savings. The efforts of a large number of engineers have made possible the construction of a still which will give an average of 70 per cent efficiency, whereas perhaps the best average that can be hoped for with cylindrical stills is 50 per cent.

**Greater Flexibility**

The advantages of flexibility are very great, due to the possibility of quickly changing from one grade of charging stock to another and of quickly changing gravities and flashpoints as found necessary. An advantage of considerable importance is that throughputs may be increased or decreased as requirements demand.

which possibility is limited with cylindrical stills, especially where heavier crudes are refined.

### Greater Safety

IN HORIZONTAL stills where considerable steam is used, variation in steam pressure greatly influences the evenness of the operation and where power plants are not of the best and superheated steam is not always obtained, the blowing of safety valves constitutes a fire hazard of considerable importance.

With ordinary precautions safety valves on tube heaters will not blow. In the event of a tube leaking or burning out, the fire is localized in the tube heater and the worst that could happen would be the burning out of the tubes which in most cases could be prevented by proper handling.

An added feature of safety is the amount of oil under treatment at one time. A battery of horizontal stills under the best operating conditions are half full and in large installations this constitutes a considerable amount of oil, whereas in the tube heater the oil in the heater proper at any time amounts only to the volume in the tubes.

### Auxiliary Equipment

EXCEPT in cases where sectional problems such as corrosion due to sulfur or salts or running for special stocks is practised, the auxiliary equipment for the successful operation of a tube still is essentially the same for all types of oil. The following list comprises the necessary equipment.

Pumps { 2 crude oil charging pumps.
2 residual fuel oil pumps.
2 fuel oil burner pumps.

Strainers—

Meters { Charging line.
Residuum line.
Fuel oil to burners.

Thermometers and recording instruments.

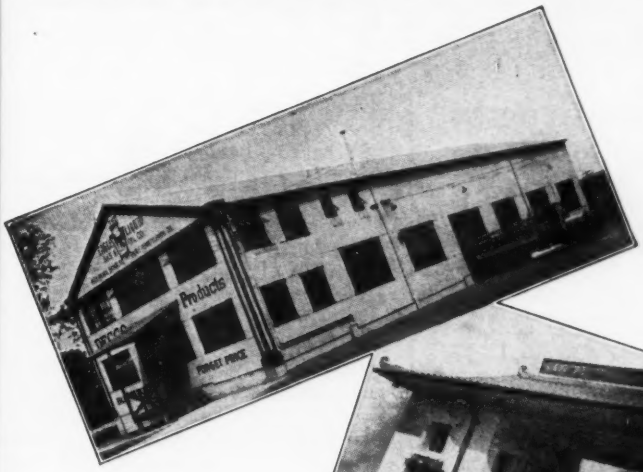
Heat exchangers.

Fractionating equipment and condensers.

It is false economy to attempt to operate with only one pump. A spare should always be held in readiness. It is not necessary that the spare pump be idle, but should be so hooked up that it could at a minute's notice be pressed into service, as an interrupted crude supply may mean burnt out tubes, a fire and considerable loss of time and money. Pumps should be changed at regular intervals to assure their being in perfect operating condition at all times. All pumps should be placed in one room far enough from hot steel stacks or other dangerous sources of heat to eliminate any possibility of fire from leaky glands or blown out gaskets should this occur.

Strainers have been found to


STEEL BUILDINGS for EVERY PURPOSE



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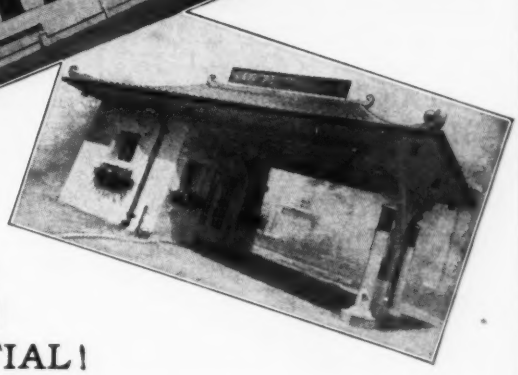

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ECONOMICAL!
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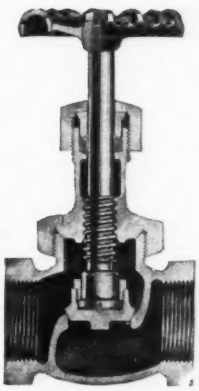

*Sectional view, Fig. 750 Screwed, Jenkins Bronze "Marine" Globe Valve, with regrinding seat and union bonnet.*

A union bonnet valve for the "in-between" pressures

For pressures between 150 and 225 lbs., a stronger valve than a standard pattern valve is needed, and yet the service does not require an extra heavy valve. For such work call on the Jenkins illustrated at the left.

This Jenkins Union bonnet globe valve is a regrinding valve, designed originally for marine use but later adopted by the oil industry and a number of others.

Note in the sectional view, the powerfully threaded spindle of manganese bronze. The ample packing space with metal follower to compress the packing, and the bend seat at the neck which insures tight contact between body and bonnet.

*JENKINS BROS.*

*80 White Street.....New York, N. Y.*
*524 Atlantic Avenue.....Boston, Mass.*
*133 No. Seventh Street.....Philadelphia, Pa.*
*646 Washington Poulevard.....Chicago, Ill.*
*JENKINS BROS., Limited*
*Montreal, Canada* *London, England*

Always marked with the "Diamond"
Jenkins Valves
SINCE 1864

# TRIPLEXD GASOLINE HOSE

**ALL sizes and lengths of Triplexd Hose are carried in stock in these cities:**

**MEMPHIS:** 245 Monroe Ave.
**JACKSONVILLE:** Dixie Culvert & Metal Co.
**ATLANTA:** P. O. Box 1343
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**BROOKLYN:** 236 Tillary St.
**BOSTON:** 142 Berkeley St.
**PITTSBURGH:** 341 Second Avenue
**CLEVELAND:** 1302 Ontario Street, North
**CINCINNATI:** 450 East Pearl Street
**DETROIT:** 5459 Grand River Avenue
**ST. LOUIS:** 1621 Pine Street
**KANSAS CITY:** 13th Street and Eastern Ave.
**CHICAGO:** 1213 W. Washington Blvd.
**SAN ANTONIO:** 1401 South Flores Street
**HOUSTON:** 700 N. San Jacinto Street
**EL PASO:** 1020 East Overland Street
**NEW ORLEANS:** 211 South Peters Street
**MINNEAPOLIS:** 900 Sixth Ave., S. E.
**DENVER:** 4800 York Street
**SAN FRANCISCO:** 873 Mills Building
**LOS ANGELES:** 1625 South Hill Street
**SEATTLE:** 67 Columbia St.
**OMAHA:** 13th & Willis Sts.
**TORONTO, CAN.:** Dunlop Tire & Rubber Goods Company, Limited
**LONDON, ENG.:** J. Bazley-White, 3 Love Lane, Eastcheap, E. C. 3

METAL HOSE & TUBING CO. INCORPORATED 236 Tillary Street BROOKLYN, N.Y.


be very practical and desirable to prevent pieces of rags, waste or wood from becoming lodged in the pump valves and interfering with their operations. Two strainers should always be installed with suitable by-passes to enable either to be shut off and cleaned at any time.

Liquid meters on the crude charging line, residual fuel line and fuel oil line to the burners where oil is used for fuel are one of the most important items in connection with the successful operations of a tube heater. To hold steady temperatures and even gravities it is very essential that hourly quantities of oil charged and pumped out be kept constant.

It has been the experience of the writer that when temperatures show considerable variaton the reason has been in most cases due to the stillman's not checking his meter reading often enough, and not to the uneven firing which in most cases is thought to be the cause of the trouble.

Where liquid fuel is used, poor heat transfer due to any of a number of causes can not be easily detected as a little more or less fuel used is not easily detected until the trouble has become pronounced. An accurate check of meters will enable the efficiency of the operations to be determined at all times and the condition of the tubes themselves.

In coal firing the average fireman is very pronounced in his views should he suspect that he is shoveling more coal than he thinks necessary.

MANY refiners recall the haphazard methods previously employed in operating and regulating crude stills. Cuts were made by odor, color, number of hours the still has been running or by temperature alone. Competition has become so keen and specifications so important that where obsolete methods are employed obsolete refineries result. Accurate temperatures and gravity checks combined with laboratory tests are necessary at all time to insure best results.

Thermometers should be so placed that accurate readings can be readily obtained at all times, showing every step in the general operation such as temperature changes in heat exchangers, fractionating equipment and heater proper. Under such conditions a change at any point may be noticed and rectified before a general change in temperature occurs throughout the system.

Recording instruments showing temperatures and pressures are an indispensable part of the operating equipment. They furnish the only indication of the actual operating conditions and the only permanent record of value.

Heat exchangers in general use are of the shell and tube type which allow of a considerable better rate of heat transfer than most other types and due to their compactness may be placed in relatively small space. Because of the small amount of space occupied by the equipment the opportunity afforded for utilizing spent heat is very favorable and better efficiency may be obtained because of smaller losses due to radiation.

OPINIONS as to the fractionating equipment are various and at this time a number of plants have very successful and complete installations which have done away with any necessity for rerunning.

Where coal is used for fuel the inspection of the tubes should be made on every shift. The manufacturers of heaters have recognized this important fact and have increased the number of inspection doors to allow for an inspection of all portions of the tubes.

An accumulation of ash upon the outside of the tubes, especially noticeable at the ends, retards the draft, gives poor heat transfer and makes it very difficult to hold temperature up. If allowed to continue tubes become overheated. To prevent this tubes, should be blown once each day the end of the pipe being bent so that the ends of the tubes may be reached.

Preparing a heater for operating has never been given the proper attention. It is surprising that the importance of this and the large amount of money that is spent for repairs to settings is not realized. Settings which under ordinary conditions should not need extensive repairs for years are found to be in need of overhauling inside of six months.

In most cases it is possible to arrange the construction to start work upon the heater and complete the setting before other work is completed, thus allowing for ample time for preliminary heating. The writer recalls one very large plant at which three days after fires were lighted the still was operating under cracking temperatures and pressures, with the result that in a few days the setting was practically ruined.

A good schedule which would add very little expense and which would be amply repaid would be as follows: Allow heater to stand at least a week after completion of the setting, then close all dampers and build a very small fire which should be increased a little each day, until the heat is felt through the brick work, which should take about five days. At this stage oil should be pumped through the tubes and heat raised 100 degrees each day until operating temperatures are reached.

Fuel oil may be used during the process of heating up and when everything is in readiness for operating, crude oil may be pumped through the tubes. A connection should be installed to pump bottoms into slop until such time as the proper residuum gravity is obtained.

The shutting down of a tube heater

# Your Hose Expense is Still TOO HIGH—unless—

SUPPOSE your pumps ARE the best pumps it is possible to make.

Suppose your hose IS of the HIGHEST excellence.

Your hose expense is still TOO HIGH—

Unless you are INSURED against losses from ordinary wear and tear, accidental breakage, and mishandling. For those losses are the GREATER PART of your hose expense.

YOU ARE NOW INSURED for a definite period against those losses in the operation of every pump you own, to which Triplexd Registered Insured Gasoline Hose* is attached.

That insurance hasn't cost you a cent. You haven't even signed anything or mailed anything to get it. It's yours free and without red tape. And it doesn't matter how you got that Triplexd Filling Station Pump Hose — standard equipment on your pumps, given you by a friend, obtained second hand, or delivered from a Triplexd Distributor —it's all the same.

***You are protected against hose renewal expense for over two and a half years!***

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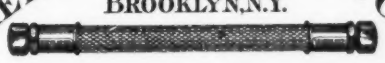


****Triplexd Registered Insured Gasoline Hose is any length of Triplexd Filling Station Pump Hose ¾", 1", or 1¼" inside diameter, and not more than 15 feet long, shipped from our Brooklyn Factory on or after June 1, 1927***

# TRIPLEXD

*Registered* GASOLINE PUMP HOSE

# 4 times a day

WHEN they're rushing to work in the morning; hustling through their short lunch period at noontime; hurrying homeward when work is done; and at evening when their thoughts are turned to pleasure and recreation. At least four times a day your station is taxed to its capacity to give quick service.

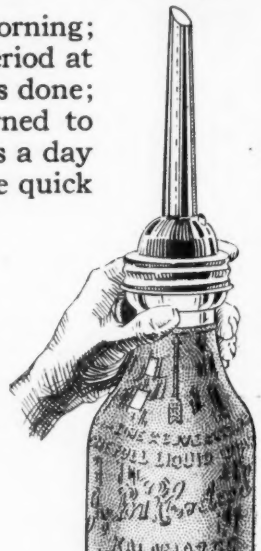
No need to delay them. Quick service can be one of your business-pulling magnets.

Rhodes Oil Dispensers enable you to give snappy service. Pre-filled, pre-measured and displayed near your gas pumps, everything handy, so you can empty oil into the crankcase quickly.

Equip your station today with these time-saving dispensers and boost your oil profits.

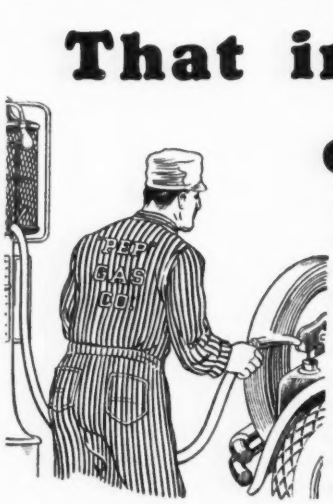
JAY B. RHODES COMPANY
Kalamazoo, Michigan

**RHODES** *PRE-FILLED* *OIL DISPENSERS*



*Rhodes Dispensers are speedy pouring, transparent and accurate. They will help you increase your oil sales.*

# That impression of efficiency




When motorists drive up to your filling station are they served by neat appearing attendants?

Add to your service that one touch that makes it complete. Have your men uniformed — "Well dressed for work."

Standard Work Garments are made of the finest materials — triple stitched and reinforced — made to look right and wear right.

## Standard Work Garments

**$3.25 each**

15% off in dozen lots. Special Prices in larger quantities.

Choice of blue denim, white, hickory stripe, express stripe, fancy blue and gold stripe. Union Made. Name or trade-mark embroidered in fast colors for 25c per garment.

## The Standard Garment Co.

Toledo, Ohio


is one of its best features, the quickness and completeness of this operation has saved many fires and long delays and can be accomplished within a very few minutes time. Where a temperature sufficiently high has been carried to cause the brickwork to become reddened, oil should be pumped through the tubes until most of the redness disappears or until the temperature of the oil is reduced, after which oil is shut off and steam blown through the tubes.

At times it may be found necessary to shut down without allowing heater to cool before steaming tubes. Under these conditions the maximum amount of steam should be put through the tubes. In some installations the steaming out is conducted by having a steam connection at the bottom (heater inlet).

Steaming from the top (heater outlet) is greatly to be preferred for general use as it eliminates the necessity of steaming into the whole system, allowing the still to stop running almost immediately which is very desirable if trouble is encountered. Where steam is forced in the bottom, unless the oil is first pumped out of the tubes, should there be a break in a tube the fire is greatly augmented because of the oil in the tubes being forced out into the combustion chamber. The arrangement for steaming through the heater outlet is as follows.

A valve with chain and sprocket attachment is installed on the crude line just after it leaves the heater, the steam being introduced between the valve and the heater. When steaming out is necessary the valve is shut and steam introduced in the tubes and allowed to blow into the slop tank until the line is clear, after which it may be blown into the air.

Other advantages in blowing out from the top are that tubes are quickly emptied of oil, steaming time may be shortened and back firing of tubes eliminated. Under certain conditions steaming from the bottom has its advantages especially in big pressure stills where steaming out of whole system is desirable or where a bad break in a tube makes it necessary to steam from both ends in order to save the other tubes. As a matter of precaution it is advisable to have steam connections at both inlet and outlet of heater.

Smothering lines should be placed inside the steel doors covering the return headers as at times the asbestos around the heaters becomes oil soaked and a fire is started. If vapor is escaping from the headers steam should be introduced before doors are opened. Steam for extinguishing fires hold a very important place in refineries. Ninety per cent of still fires can be extinguished with steam before they make any headway.

# Standard of Indiana Advertises Aviation Fuel and Oil—Not Ethyl Gas

By Ward K. Halbert
N. P. N. STAFF WRITER

STANDARD Oil Co. of Indiana's campaign to promote commercial aviation in the United States has progressed now to the point where special aviation gasoline and motor oil are being stocked at all of the company's bulk stations, numbering 4200. Station managers are instructed to give prompt service to any aviator who calls on them, regardless of distance or time of day.

Two hundred plants, situated near air fields offering consistent demand, receive aviation gasoline in tank car lots. Points near emergency landing fields keep adequate supplies on hand. Even the smallest and most remote station carries a sealed 55-gallon drum of "Stanolind Aviation" gasoline and a five-gallon can of "Stanolind Aero" oil for any unfortunate aviator who might be forced down on strange ground. Constant stocks of this aviation motor fuel approximate 500.000 gallons, it is estimated. The company carries full page ads of its aviation fuel and lubricants in two aviation periodicals.

Standard's aviation fuel is not Ethyl gasoline. It is a pure petroleum product 64-66 gravity, even lighter than "Solite", the company's high-test gasoline for automobiles. The company's Aviation Manual gives the distillation range as shown in accompanying table.

Company officials say they have been requested on certain occasions, to provide certain aviators with ethylized aviation fuel, and have done so at considerable trouble and expense, but they do not use such a product in their own airplane, the "Stanolind", or carry it in stock anywhere.

Discussing this point the manual says, "Ethyl fluid has given very promising results in automobile engines, but has not yet been generally adapted for use in aviation fuel. In fact when Stanolind Aviation Gasoline is used in the ordinary aircraft engine, there is no need for an anti-detonator of that type."

Standard has been making this special airplane fuel for 10 years. The product antedates both Ethyl gasoline and Solite. The first of it was manufactured shortly after the war when company officials were sold on the possibilities of commercial aviation. It was cut then to meet the requirements of an airplane motor and has changed slightly since as those requirements have changed. It is the boast of the sales department that they have never received a complaint on either the fuel or the motor oil.

Several of the planes that took part in the recent National Air Derby from Long Island to Spokane, Wash., used Standard Oil products and were serviced along the way by Standard Oil agents. John P. Porter, one of the Standard Oil Co.'s pilot, says that the average time Standard oil men used in giving service to planes in this famous race was 4 minutes, counting from the time the plane landed. Incidentally, he says Standard serviced five of the six winners.

The company has a file of letters of gratitude from aviators who have enjoyed Standard's peculiar service when they were in trouble. Although there is no rule on the subject, there is an understanding among flyers that they circle an oil station before they land if they want quick service with fuel and oil. Standard station agents have been instructed to answer such requests with dispatch.

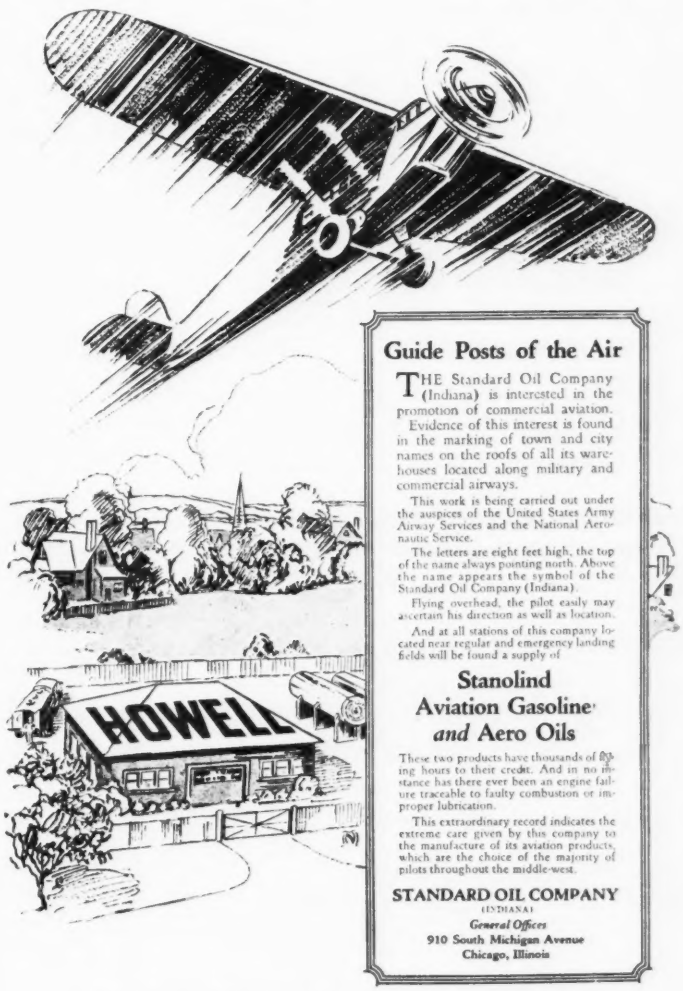
In this letter file is a communication from Hanford McNider, assistant secretary of war, who made a forced landing in a corn field in Indiana less than a month ago, in need of gasoline. He wrote to his father in Iowa a few days later telling how quickly the Standard Oil men in a nearby town got him on his way.

Carrying this air service further, orders went out from 910 South Michigan Ave., Chicago, recently to paint the town on the roof of every Standard Oil Co. warehouse. Warehouses along air lines have carried such signs as aids to flyers for nearly two years but the late rule is to have the same plan carried out at every plant the company operates. The work is in progress and more than 1000 warehouses already carry the marking.

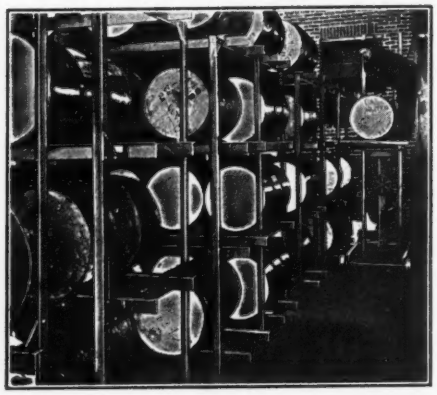
The lettering is in white on a dark background. Specifications require that the letters

AVIATION GASOLINES

| Per Cent Off | Stanolind Aviation | U. S. Domestic |
|---|---|---|
| 5% | | 122 F. Min. |
| | 256 F. | 167 F. Max. |
| 50% | 209 F. | 221 F. Max. |
| 90% | 272 F. | 311 F. Max. |
| 96% | 310 F. | 347 F. Max. |
| E. P. | 346 F. | 374 F. Max. |


HOWELL
Guide Posts of the Air
THE Standard Oil Company (Indiana) is interested in the promotion of commercial aviation.
Evidence of this interest is found in the marking of town and city names on the roofs of all its warehouses located along military and commercial airways.
This work is being carried out under the auspices of the United States Army Airway Services and the National Aeronautic Service.
The letters are eight feet high, the top of the name always pointing north. Above the name appears the symbol of the Standard Oil Company (Indiana).
Flying overhead, the pilot easily may ascertain his direction as well as location.
And at all stations of this company located near regular and emergency landing fields will be found a supply of
Stanolind Aviation Gasoline and Aero Oils
These two products have thousands of flying hours to their credit. And in no instance has there ever been an engine failure traceable to faulty combustion or improper lubrication.
This extraordinary record indicates the extreme care given by this company to the manufacture of its aviation products, which are the choice of the majority of pilots throughout the middle-west.
STANDARD OIL COMPANY
(INDIANA)
General Offices
910 South Michigan Avenue
Chicago, Illinois

THIS ADVERTISEMENT APPEARS DURING OCTOBER 1927 IN TWO AVIATION PUBLICATIONS.

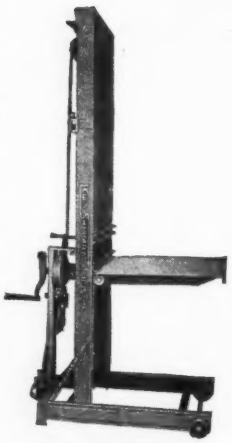


Lewis-Shepard Barrel and Drum Racks are made of channels. You pay for no more steel than necessary. All units arc-welded. Easily assembled. Made to any height and to fit any floor space.

*Write us.*

## Stackers Save Dollars

Hundreds of dollars are saved by scores of concerns in the oil industry every year by using Stackers. They save time, men, floor space. Particularly we recommend for the industry the 500 lb. Stacker shown at the right. Write today for 1927 Catalog. LEWIS-SHEPARD CO., 143 Walnut St., Watertown Station, Boston, Mass.



**500 lb. Stacker**

A master portable elevator to handle oil drums and barrels more economically. No need to pay more if your loads are 500 lbs or less. Send for Catalog.

LEWIS-SHEPARD



### *"Burning Liquid Fuel"*

LEARN real facts which have never been published before on the subject of burning liquid fuel, by W. N. Best, the recognized authority.

Send your order and check for $4 to—

**National Petroleum News**
**1213 W. 3rd Street Cleveland, Ohio**


be painted in stripes 1 foot wide and stand 8 feet high—the tops of the letters toward the north. Thus an aviator over a strange town may learn not simply his location but direction.

Prices of aviation gasoline in the various towns differ on the same ratio as the normal price of Red Crown gasoline. For purposes of comparison, the Chicago tank wagon price on Red Crown in 50-gallon dumps is 15 cents, on Solite in 50-gallon dumps 18 cents, and Stanolind Aviation in 50-gallon drums is 20.2 cents. It is correspondingly more expensive in car lots.

There is no considerable demand for the aviation fuel except from aviators. In some remote places where it is carried in stock, there is a little demand yet from the former buyers of "L.&S." gasoline, a product Standard has ceased to manufacture. "L.&S." stands for Lighting and Stove. It was used in the old style gasoline lamp fed by a hollow wire, and also in the ancient stove that burned gasoline, controlled by a needle valve.

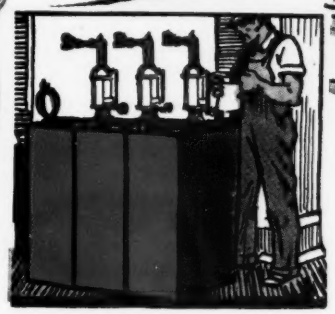
Company authorities do not describe Stanolind Aviation gasoline as a straight-run product. They say it is a narrow series of petroleum fractions having a narrow range of boiling points in an unbroken chain. It is described as a homogeneous hydrocarbon compound, highly volatile, acid-free, uncontaminated and absolutely uniform. "It is very important" the manual says, "that aviation gasoline be made from a narrow range of fractions in order to minimize the change in viscosity due to changes in temperature."

Airplane motors, however, high compression, do not build up such high pressures at lofty altitudes as they do on the ground, because the air taken into the motor at high altitudes is less dense. Thus a very light gasoline is required.

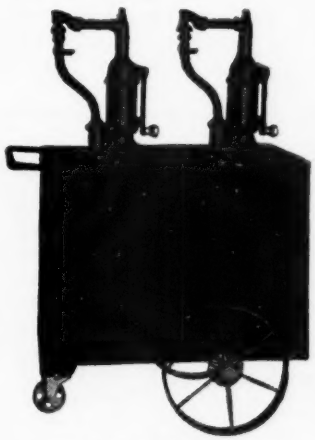
Stanolind Aero oil is heavier than ordinary motor oil, used in automobiles. Company authorities say they have collaborated with manufacturers of aircraft, the Aeronautical Chamber of Commerce and other authorities in compiling the data contained in the manual and in developing a lubricant suitable for the needs of airplanes. The oil they are stacking at their 4200 bulk plants is described as having a viscosity of 95 seconds at 210 degrees Fahr.

Standard Oil Co. of Indiana went in seriously for aviation last May 21, the day Col. Lindbergh landed in Paris, when Col. R. W. Stewart and several other directors flew from Detroit to Chicago in the company's new 8-passenger plane—said to be the finest on earth. Standard officials have traveled extensively in the plane since and have entertained hundreds of notables in their territory. They call the plane "Stanolind".

# WIZARD



No. A 6040 BATTERY
Represents storage capacity of 180 gallons in 39¼" space.



No. C-2-30W
COMPARTMENT TANK UNIT
Two 30 gallon compartment tanks. Two 6" fill openings with pressed steel lock covers, screens, outside gauge sticks, 15" wheels on rear. Tank dimensions 33" wide by 19¼" deep.

## Quality Counts, Both in the Oil You Sell and the Dispensing Equipment You Use --- Motorists Recognize Both and Buy where Both are Present

During those few precious moments that the customer sits in his car, while he is waiting for that five or ten gallons of gasoline, are you selling him on your oils? This period affords you a greater selling opportunity. If you present your products properly, his eyes will do 75 per cent of the selling job for you. There isn't a thing on his mind. There isn't a single thing to do but wait, so why not turn these few precious moments to your advantage --- to selling him on your oil.

Here's where Wizard can be of real assistance to you and make a lasting impression on your customer.

*Every oil marketer should have a Wizard catalogue --- it's yours for the asking.*

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**Weather-proof --- Dust-proof and Water-proof**
**Oil, Grease and Kerosene Equipment**

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# Highland Cabs are built for Safety and Long Wear

MAXIMUM driver protection is afforded by the Highland Cab. The roof is built to withstand the shock of almost any falling projectile which might hit it.

Note in the illustration above the substantial roof construction which consists of three-ply heavy wood panels with a covering of one piece steel heavy gauge, securely bound to the under edge, thus minimizing vibration and giving rigidity as well as weather protection.

There are many other features of Highland Cab construction that make for satisfied drivers and long wearing quality. The Rocker Sill Mounting—an exclusive Highland feature—makes these cabs immune to the stress and strain of rough work, and keeps the cab itself in alignment with the radiator no matter how badly the chassis may be twisted.

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THE HIGHLAND BODY MFG. CO.
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HIGHLAND *Cabs*

with ROCKER SILL MOUNTING

## Oil Price Handbook

RECENT crude and tankwagon price changes have caused many an oil man to study prices prevailing a year ago at this time.

What was Mid-Continent crude a year ago today? Or, what was 58-60 U.S. Motor gasoline in Oklahoma? Or, the tankwagon price of gasoline a year ago? These are some of the questions you are asking yourself right now.

You can get the answers most conveniently, rapidly and accurately in the OIL PRICE HANDBOOK for 1926. It contains the refinery, tankwagon, crude prices and export markets for the entire year 1926 as published in the weekly issues of National Petroleum News. 146 pages, cloth bound, marginal index—price $5. Send for your copy *today*.

**NATIONAL PETROLEUM NEWS 1213 W. 3rd St. Cleveland, Ohio**

## To Sell Natural Gasoline For Automotive Use

TULSA, Nov. 1.—Phillips Petroleum Co., the largest manufacturer of natural gasoline in the Mid-Continent field, is building four stations through which it will sell gasoline to the public for motor car use. Three stations are under construction in Kansas, one at Salina, one at Topeka and one at Wichita. The remaining station is being built at Bartlesville where Phillips maintains its general offices.

All stations being built by the company are on railroad trackage property so that gasoline may be unloaded direct into station storage. O. L. Cordell, head of the marketing department for the company, says that the policy of the company will be to maintain the regular posted price. The first station will be ready within two or three weeks.

The company has made no announcement yet as to the specifications of the gasoline it expects to market. It is generally thought that the product will contain at least a small amount of refinery gasoline. Location of the stations now planned in the Kansas-Oklahoma district is for the purpose of giving the new gasoline a vigorous trial in the automobiles of the motoring public. Stations in the southwest where summers are extremely hot would give a better test of performance than any group located in the north.

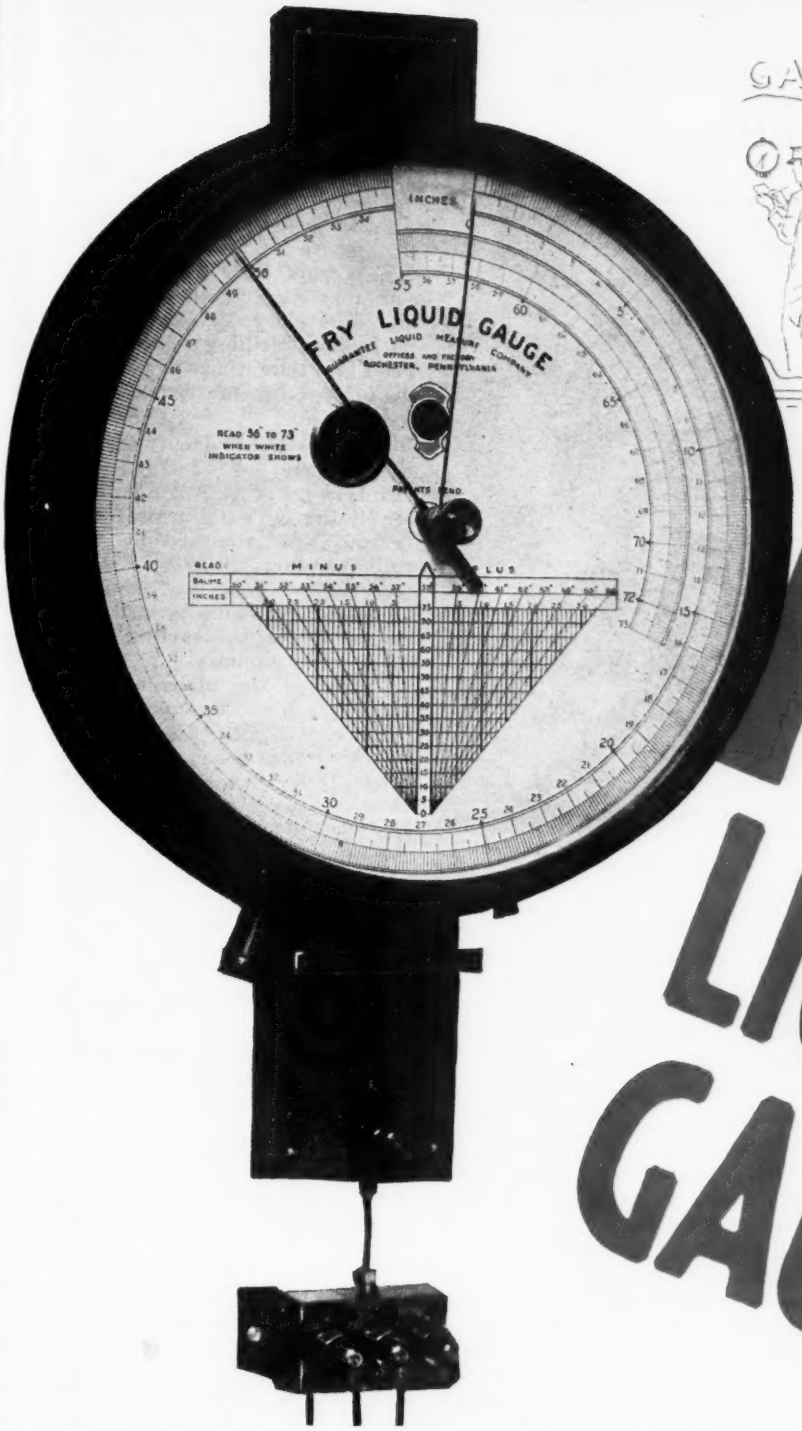
## L. A. Stewart Starts New Marketing Company

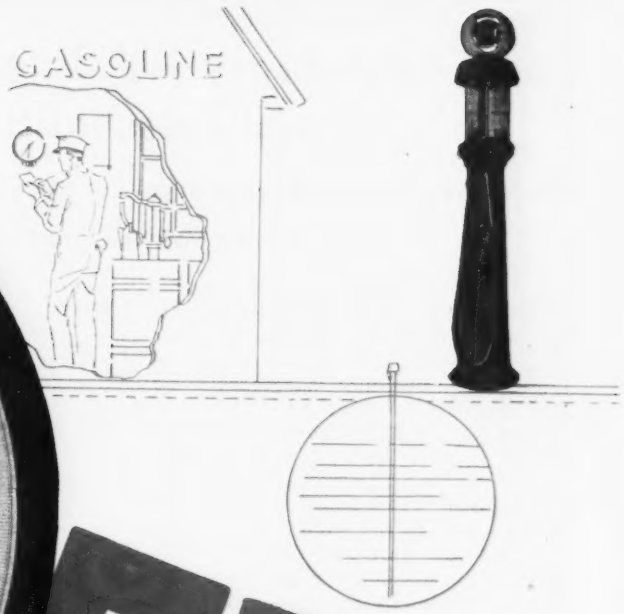
CHICAGO, Nov. 1.—L. A. Stewart ("Al") opened an oil marketing office in the Pure Oil building, 35 East Wacker drive, Chicago, on Nov. 1. His company will be incorporated presently under the name of the L. A. Stewart Co., and will engage in a general carload marketing business. Mr. Stewart's office is in room 1472, telephone Central-1942.

Until recently Mr. Stewart was identified with John M. Carson in the Atlas Petroleum Co., 624 South Michigan Ave. For several years before that he was an officer of Refiners Petroleum Co., 122 South Michigan Ave. Mr. Stewart has been in the tank car sales field of the petroleum industry all of his business life, first as a refinery sales representative and then as a carload marketer.

---

WASHINGTON, Nov. 1.—The slight decrease in fuel oil consumption by railroads during 1926 as compared with 1925 is attributed to increased prices of fuel oil, especially in south central states, and to the increased efficiency in its utilization, particularly in California, Texas and Louisiana, according to the U. S. Bureau of Mines.

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## *Now*—tank contents, receipts and deliveries can all be accurately determined

No longer do you have to guess at the amount of liquids in your tanks by using approximate measurements to determine their contents.

The days of the old out of date inaccurate measuring stick are over, for with the introduction of the Fry Liquid Gauge, a positively accurate, never failing system of tank measurement has been supplied.

The Fry Liquid Gauge is as scientifically accurate as a thermometer, simple in construction, easily installed and requires no attention.

One Fry Liquid Gauge installed at any point convenient to you, will take the readings of several tanks, giving independent readings of each.

With the facility of tank readings afforded by the Fry Liquid Gauge you are able to keep your finger on the pulse of your business constantly, and to know from day to day—even from hour to hour—just exactly what business you are doing.

*Write for price and any other desired information.*

FRY EQUIPMENT CORPORATION, ROCHESTER, PA.

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FRY EQUIPMENT COMPANY OF CANADA, LTD., TORONTO, CANADA

# Our Industry — A Page of Facts and Personalities

National Petroleum News

By Paul Wagner

COLONEL R. C. KULDELL, general manager of the Hughes Tool Co., oil field equipment manufacturers, recently addressed the Houston Rotary club on "Ethics in Employee Relationships." After stating that "no greater reward comes to the employer than the satisfaction of seeing faithful employees go up the ladder of success and enjoy more of this world's goods," he made these pertinent observations:

"The employer is a leader. His real task is to inspire a following of loyal, eager employees and direct and co-ordinate their efforts to the most efficient accomplishment of the goal. Methods are only tools. They are necessary but will not produce results of themselves. A sincerity of purpose is absolutely essential. Constant speechmaking to employees is a poor sign. Your employees will judge you by your actions; your methods and policies will soon become known to them and far better to say nothing than to preach a better policy than you live."

* * *

R. L. JOHNS, who has been assistant division clerk of the Humble Oil & Refining Co., at Corsicana, has been transferred to McCamey, Texas, to occupy a similar position. R. J. Downey of the Humble organization at Wortham replaces Mr. Johns at Corsicana.

* * *

J. R. DODDS, in charge of marine supplies at the Tampico refinery of the Mexican Eagle Oil Co., Ltd., (El Aguila) has returned to Mexico after a four months' vacation in England. He was accompanied by Mrs. Dodds and their small son.

* * *

IT IS the belated application of the air gas lift recovery method on a wholesale scale that has astounded the petroleum industry, according to John M. Lovejoy of Tulsa, vice president and general manager of the Amarada Petroleum Corp.; its principle was known within five years after the discovery of oil in this country by Drake. Mr. Lovejoy points to a patent issued to one Gunnison in 1864 covering almost the identical process by which gas coming from a well is returned to do more work in producing oil, and deficiency in gas is made up by air.

*ALEX W. McCOY*

ALEX W. McCOY, Denver, vice president of Marland Oil Co. of Colorado and a past president of the American Association of Petroleum Geologists, is widely known for his scientific studies in addition to his executive attainments.

Both his C.E. and A.M. degrees were obtained at the University of Missouri, where he was research assistant engineer in 1913. Mr. McCoy was an instructor in geology at the University of Oklahoma from 1914-1916, then joining the geological forces of the Marland Oil Co., at Ponca City. He remained with the Marland interests until 1916 when he joined the Empire Gas & Fuel Co., at Bartlesville, as chief sub-surface geologist. There he remained until 1919, a part of the time as assistant chief geologist. In 1920-1921, he was a member of the geological and engineering firm known as McCoy, Shidel & Pasewalk. Later, he engaged in private individual practice before joining the Marland forces again as an executive of the Colorado subsidiary company.

Mr. McCoy was born at Independence, Mo., Feb. 6, 1889.

Besides the A.A.P.G. and the American Petroleum Institute, in which last mentioned organization he has taken an important part in research work, Mr. McCoy is a member of the American Institute of Mining & Metallurgical Engineers.

HENRY AGGERS, 83, who began his oil country career four years after the drilling of the Drake well in Pennsylvania, recently took part in two reunions of petroleum veterans. The first was at the International Petroleum Exposition, Tulsa, where he was one of 40-odd veterans presented bronze medals. Another was the Ranger homecoming, where he was a familiar figure. Mr. Aggers lives at Ranger with a son, Roy Aggers, also identified with oil. The elder Mr. Aggers has done no actual drilling since 1924, but prior to that time had been active in general Ranger development.

* * *

INDIVIDUALS identified with the petroleum industry, whether members of the American Institute of Mining & Metallurgical Engineers or not, are requested by the Institute secretary, 29 West Thirty Ninth street, New York city, to notify him in case they desire to visit the Venezuelan oil fields, starting from New York next January. It is necessary to know of the plans of individuals contemplating the trip by Dec. 1, next, as the Institute has a call on all accommodations on the S. S. Lapland of the Red Star line until that time. After Dec. 1, the steamship line will itself fill unoccupied space. Accommodations may be had, according to the Institute, for the 23-day voyage from a single cabin for one person at $250 minimum up to suites for larger parties. It is planned to spend four days in the Venezuelan oil fields skirting Lake Maracaibo.

* * *

DR. HAL P. BYBEE, geologist of the Dixie Oil Co., Inc., direct subsidiary of Standard Oil Co. of Indiana in west Texas, is suggested for championship honors as a killer of rattlesnakes. One afternoon recently he dragged 47 of them from their dens with a fishhook and killed them.

* * *

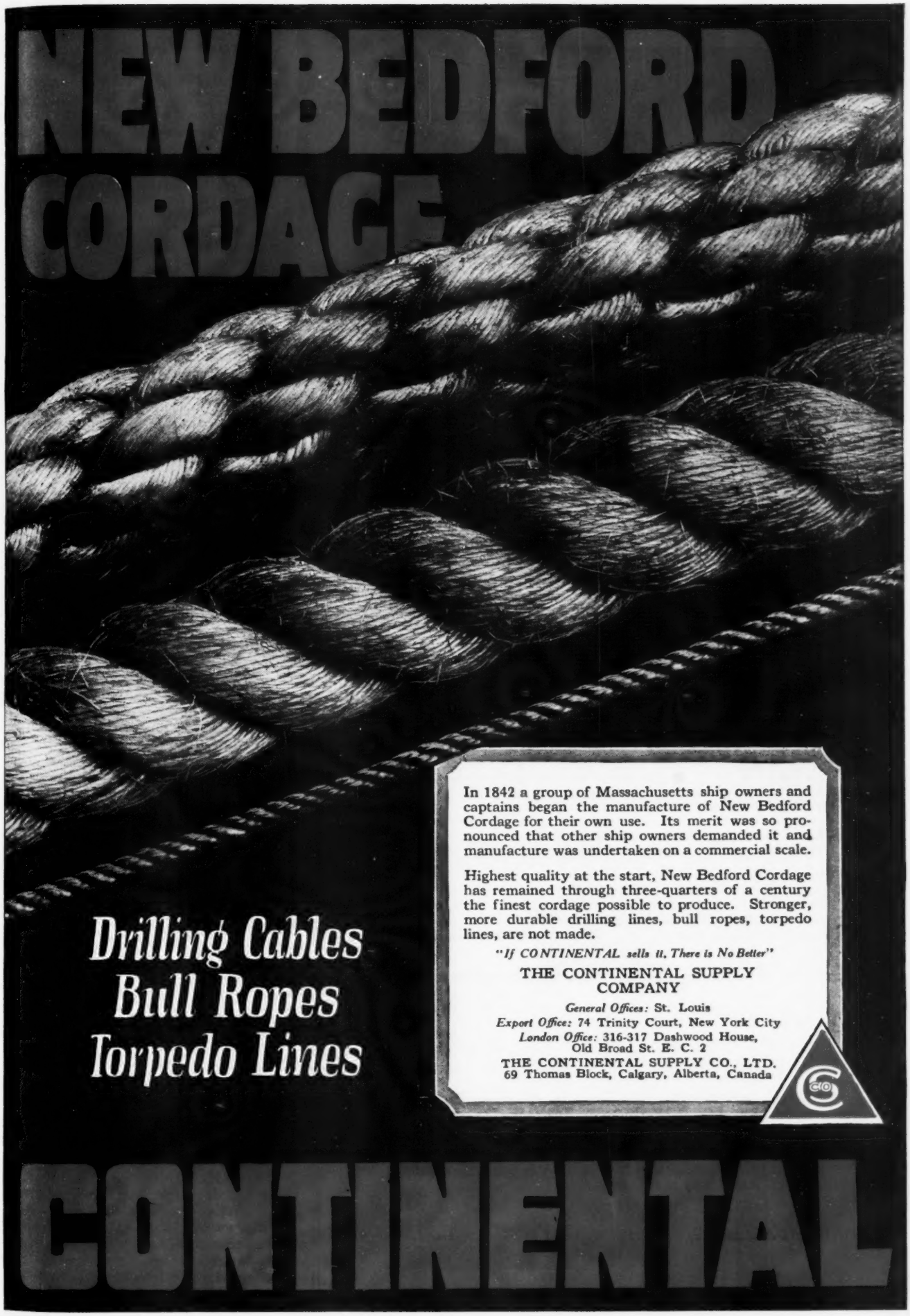
HARKING back to the success of the International Petroleum Exposition at Tulsa, here is the comment of Homer Craig, manager of the drilling department of the Compania de Ingenerios y Contratistas Martin, S. A., at Tampico, as expressed after his return to Mexico:

"There was lots of new equipment at the convention, which I found very interesting."

While at the exposition Mr. Craig renewed his acquaintance with Ernest J. Nicklos, formerly a drilling contractor and individual producer in the Tampico district but now manager of the Tulsa division producing department of The Texas Co.

* * *

IT'S MAYOR MULROY of Ponca City now. Harry C. Mulroy, vice president of Marland Oil Co., long active in civic affairs in the Kay county, Okla. metropolis, succeeds the late Curt Hall.


NEW BEDFORD
CORDAGE
In 1842 a group of Massachusetts ship owners and captains began the manufacture of New Bedford Cordage for their own use. Its merit was so pronounced that other ship owners demanded it and manufacture was undertaken on a commercial scale.
Highest quality at the start, New Bedford Cordage has remained through three-quarters of a century the finest cordage possible to produce. Stronger, more durable drilling lines, bull ropes, torpedo lines, are not made.
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**Niles, Ohio**

NILES

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The price of the book is $10. Just send us your check and we will mail a copy of it to you.

National Petroleum News, 1213 W. Third St., Cleveland, Ohio

## Will Take Out More Oil From Pecos County

Staff Telegram

HOUSTON, Tex. Nov. 3.—Yates field operators constituting the Pecos county prorating committee announced after meeting in Fort Worth Oct. 31, that the quantity of oil marketed from this west Texas district would be increased to 43,000 barrels daily immediately as result of completion of Illinois Pipeline Co.'s outlet to Del Rio.

The total outlet is made up of 13,000 barrels daily new capacity and the 30,000 barrels daily previously allocated to the field by Humble Pipeline Co. Gulf Pipeline Co. which is building short pipeline from Yates field to Kansas City, Mexico & Orient Railroad near McCamey for tank car shipments has announced no change of policy. Gulf is not represented on the prorating committee but has been operating sympathetically and it is believed will continue to do so.

Simms Oil Co.'s second well which Monday extended the north end of Yates field about one-quarter mile east is rated good for 20,000 barrels open flow daily production but will be pinched to its proration quota based on hourly gauges.

## Sulphur Water Failure Offsets "Gusher"

HOUSTON, Nov. 3.—First positive knowledge of sulphur water in the lime horizon of the Hendricks field, Winkler county, comes from the 3-A-1 test of the Southern Crude Oil Purchasing Co., in Sec. 4, Public School Lands block B-12. The hole is standing full of sulphur water at 3073 feet.

The 3-A-1 test is a diagonal offset to the Southern Crude's 1-B-1 big well, in Sec. 4, which has been flowing at capacity in excess of 5000 barrels daily since its completion Sept. 5.

Landreth-Roxana tests in the adjoining Sec. 29, block B-5, immediately to the north, are standing with oil in the hole and are rated, at best, as small wells in their uncompleted condition.

---

### Wilson Returns from Cruise

LOS ANGELES, Nov. 3.—E. Clem Wilson, president of the Wilson & Willard Manufacturing Co. of Los Angeles, is back at home after a 15,000 mile cruise in the south seas in his yacht "Ripple." Mr. Wilson was accompanied by his wife and two daughters, and they made the last leg of their trip home on a liner, leaving the yacht to follow later.

FIVE GALLONS
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GULF REFINING CO.
FLYVOLENE FOR FORDS
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**Complete Air Equipment**


# *New Equipment to Improve Plants*

## Personal Notes of the Manufacturers

National Petroleum News

**Lubricating Appliance Mfg. Co.** Inc., 5638 Lake Park Ave., Chicago, Ill. has placed on the market the Larcliff Dilut-O-Meter for determining the life of crank case oils from automotive engines. The company claims that it is the only device which indicates the actual amount of dilution regardless of the origin of motor oil.

The principle upon which the Dilut-O-Meter is based is that as the oil becomes diluted it becomes lighter in body, thus allowing the stem of the Dilut-O-Meter to sink further beneath the surface of the liquid, and indicating the quality of the oil being tested.

* * *

**The Gardner-Denver Co.,** which was formerly The Denver Rock Drill Mfg. Co. and the Gardner Governor Co., has added a line of portable air compressors in five sizes. These sizes will operate the required number of concrete breakers, clay diggers, rock drills, hoists, pumps, and other such equipment. The units are powered by heavy duty, four-cylinder Buda engines. Dependable operation and long life are claimed by the company to be features of these compressors.

* * *

**The Heil Co., Milwaukee, Wisc.,** has off the press bulletins on its storage tanks and fuel oil truck tanks with pump units. All storage tanks are electrically welded and are made leakproof. Other specifications, sizes and other information are given.

Pump units on fuel oil truck tanks are adaptable to any truck tank. Several illustrations of oil companies using Heil fuel oil truck tanks are included. A feature of the bulletin is the piping layout for fuel oil tanks with and without hose reel and details on operation of pump units, and complete specifications, are furnished.

* * *

**E. L. Trask, 2580 Washington St.,** Boston, Mass., who specializes in filling station supplies, installations and repairs, has moved from Hestia Park, Roxbury, to larger quarters at the above Boston address, Roxbury district. Mr. Trask is now equipped to take care of all sizes and kinds of filling station installations and repair work, including oil burner tanks.

* * *

**The Chisholm-Moore Mfg. Co.,** Cleveland, O., placed on the market in October its new model K cyclone hoist which is described by the company as an efficient, economical and durable light-weight high speed chain hoist. New engineering improvements are claimed to give the new hoist a working efficiency of 90 per cent as against 80 per cent for the previous models, and longer life. Among the more important changes in the new model are that roller bearings are in one complete unit, it is equipped with the long-life wheel and all parts are interchangeable.

* * *

**Standard Oil Co. of New Jersey—** F. H. Bedford, Jr., elected a director.

* * *

**O. C. White, formerly vice president and general manager of the Youngstown Boiler & Tank Co. of Youngstown, O., is now in charge of sales in Michigan for the Sistersville Tank & Boiler Works, Sistersville, W. Va.** His headquarters are at Detroit. Mr. White has had long experience with various steel storage manufacturers.

* * *

**Isolantite Co. of America, Belleville, N. J.,** manufacturer of a new ceramic product of high dielectric and insulating strength for chemical tower packing, has published a bulletin on improved tower packings which provide combined mechanical and chemical characteristics. These packings, the company claims, will conserve space, effect economy, increase production and reduce money invested in towers.

Isolantite, which is processed from a highly refined pulverized material, is recommended as a severe service material in chemical, electrical, automotive and other fields. It is immune to acids and alkalis, is non-porous, has strength, resists temperature and heat shock, the bulletin states. Tower packings are made in three designs, Isoring, Isotripar and Isotomic.

* * *

**The Bessemer Gas Engine Co.,** Grove City, Pa., has developed a gas injector device which makes possible four-cycle fuel economy with two-cycle engines, retaining all the features of simplicity characteristic of two-cycle power plants. Instead of taking the gas through the mixing valve and into the combustion chamber through the inlet port, the gas is injected directly into the combustion chamber through a mechanically operated valve in the cylinder head, preventing loss of fuel through the exhaust port.

The company has also recently brought out a new single acting two-stage compressor cylinder designed to meet the need for a combined two-stage unit of high efficiency occupying less space than the ordinary two stage unit.

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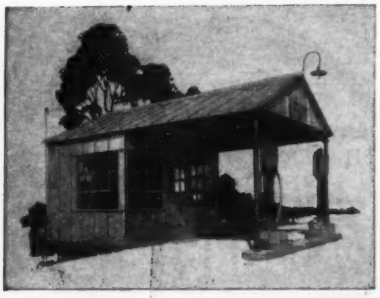

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**PETROLEUM**

REFINED OIL
GASOLINE
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GAS OILS
PARAFFINE WAX
PETROLEUM COKE

**Fuel Oil--Lubricating Oils**

CYLINDER ENGINE
CORDAGE

**RED AND PALE PARAFFINE OILS**


# New Patents

## Oct. 18

### REFINING

**Process of Refining Mineral Oils**—Theodor Hellthaler, Granschutz, Germany, assignor to the Firm: Hugo Stinnes, Riebeck Montan und Olwerke Akt. Ges., Halle-on-the- Salle, Germany. Filed Aug. 1, 1925. No. 1,645,530.

**Treating Hydrocarbons.**—Rene de M. Trayeau Elizabeth, N. J., assignor to The Texas Co., New York, N. Y. Filed Mar. 16, 1923. No. 1,645,553.

**Petroleum-Refining Process and Reagent for the Removal of Sulphur.**—Frank C. Axtell, South Pasadena, Calif., assignor to Axtell Research Laboratories, Inc., Los Angeles, Calif. Filed Dec. 27, 1926. No. 1,645,679.

**Slips for Supporting Drill Pipes in Well-Boring Apparatus.**—Edmund Curtis Pearson and James Childs, Westminster, London, England, assignors to Vickers Limited, Westminster, England. Filed Nov. 7, 1925. No. 1,643,750.

### PRODUCING

**Gearing for Oil-Well Rigs.**—William F. Reschke, Wichita, Kans. Filed Aug. 15. 1924. No. 1,645,623.

**Casing for Artesian Wells.**—Adolph Paulsen, San Carlos, Calif. Filed Mary 17, 1926. No. 1,645,719.

**Deep-Well Pump-Plunger Attachment.**—Lewis F. Davis, Santa Ana, Calif. Filed June 9, 1925. No. 1,645,802.

**Drilling Bit.**—William W. Mills, Compton Calif. Filed Sept. 2, 1924. No. 1,645,962.

**Derrick.**—Fred D. Bearly, Oklahoma City, Okla. Filed Feb. 9, 1924. No. 1,645,980.

**Sand Reel for Well-Drilling Rigs.**—Edward Timbs, Los Angeles, Lewis E. Zerbe, Moneta, and Frederick von Schlegell, Pasadena, Calif., assignors to Union Tool Co., Torrance, Calif. Filed June 8, 1925. No. 1,646,123.

### NATURAL GASOLINE

**Apparatus for Completely Separating Gasoline from Mineral Oil.**—Arthur E. Pew, Jr., Bryn Mawr, and Henry Thomas, Ridley Park, Pa., assignors to Sun Oil Co., Philadelphia, Pa. Filed Feb. 23, 1924. No. 1,645,969.

**Thermal Decomposition of Hydrocarbons.**—George D. Curme, Jr., Charlestown, W. Va., assignor to Carbide and Carbon Chemicals Corp. Filed Jan. 7, 1926. No. 1,646,349.

### MISCELLANEOUS

**Relief-Valve Mechanism for Oil Tanks.**—Gwynne Raymond, Kansas City, Mo., assignor to Black, Sivalls & Bryson Mfg. Co., Kansas City, Mo. Filed Oct. 25, 1926. No. 1,645,722.

**Process for Resolving Water-In-Oil Emulsions.**—Eugen E. Ayres, Jr., Chester, Pa., assignor to The Sharples Specialty Co., Philadelphia, Pa. Filed April 2, 1921. No. 1,646,339.

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### CORRECTION

CHICAGO, Nov. 1.—In a story about the Lion Oil Co., Chicago, in the Oct. 19 issue of NATIONAL PETROLEUM NEWS, an unfortunate error was recorded. In next to the last paragraph it was stated that Lion Oil Co. had ceased trying to be a gasoline distributor. That is not the case. The company is an extensive gasoline distributor and has never curtailed its operations in that line except that its selling activities have been centered upon motor oils and grease especially, in the last two years.

# Guaranteed *for* Ten Years

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THE SAFE and economical storage of gasoline and oils can only be accomplished with dependable tanks . . . . . When you buy "SHARPSVILLE" Tanks you are insured for ten years against leakage through defective material or faulty construction. . . . . It is our 67 years' experience in building strictly quality tanks that makes it possible for us to give this sweeping guarantee.

We supply everything for complete Bulk Plant and Service Station installation

*Literature and Prices upon request*

**SHARPSVILLE BOILER WORKS CO.**

Manufacturers of The Sharmeter and The Sharpsville All-Steel Pit

SHARPSVILLE, PA.

# SHARPSVILLE

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*Tried and true—*

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No finer compliment could be paid Cushing Products, than by the class of men selling them.

The dealers handling Cushing Products are successful, *JOIN them now—a wire or letter will bring quotations;*

58-60 U.S. Motor Gasoline
64-66-375 E. P. Aviation
41-43 W. W. Kerosene
36-38 Straw Distillate
32-36 Gas Oil Uncracked
22-26 Fuel Oil (Cushing)
24-26 Fuel Oil or Blackwell)

PRODUCING
REFINING
TRANSPORTING
MARKETING

Refineries at:
CUSHING and
BLACKWELL,
OKLAHOMA

**CUSHING REFINING AND GASOLINE CO.**
CUSHING, OKLA.



# RELIABILITY COMES FIRST

Year after year, users of Niagara Oil or Gasoline Meters depend on them for reliable measurement of petroleum products in any quantity. Their accuracy is constant---the meters are simple and trouble proof---installation is easy. Write us for catalog.

## NIAGARA OIL METERS

*Built Since 1892 By*

**BUFFALO METER COMPANY**

**2889 Main Street** :-: :-: **Buffalo, N. Y.**


## New Stations Building

**Belle Plaine, Ia.**—Ed Niebes, of Keystone, Ia., has purchased property for filling station.

**Fairview, Okla.**—Charles A. Wright will build garage and filling station.

**Eastland, Tex.**—J. H. Martin is building filling station.

**Marlboro, Mass.**—Standard Oil Co. of New York will build filling station.

**New Cumberland, Pa.**—Charles Gohn is building filling station on the Susquehanna Trail.

**Waverly, Ia.**—Sinclair Refining Co. is building filling station.

**Plymouth, O.**—J. O. Shreck and O. L. Taylor are building bulk and filling station.

**Monroeville, O.**—Columbia Oil Co. purchased property for bulk and filling station.

**New Holland, O.**—Louisiana Oil Refining Corp. is building filling station.

**Midland, Tex.**—J. B. Ford is building filling station.

**Fayette, O.**—Scott Garling and Carlos Mohr purchased property for filling station.

**Willard, O.**—C. H. Garing has purchased property for filling station.

**Chardon, O.**—J. H. Cottrell is building filling station.

**Joplin, Mo.**—Economy Oil Co., Kansas City, seeks permit for filling station.

**Houston, Tex.**—E. J. Lindeman will build filling station.

**Duncan, Okla.**—G. W. Hopkins is completing filling station.

**Harrisonville, Mo.**—E. M. Wilhoit purchased property for filling station.

**Springfield, Mo.**—J. N. Garrison will build filling station.

**Waterloo, Ia.**—Grundy Oil Co. is completing filling station.

**Grinnell, Ia.**—L. P. Jordan has purchased property for filling station.

**Laddonia, Mo.**—Ed Boyd will build filling station.

### Nebraska Oil Inspector Dies

LINCOLN, Neb., Nov. 2.—Neil P. Hansen, chief of the bureau of food, drugs and oils, died at his home last Saturday. He had just completed a trip through central Nebraska last week. His wife found him dead after he laid down to rest before dinner. Henry Obbink, at present inspector for the Lincoln district, will succeed Mr. Hansen temporarily.

### Invents Incinerator

LOS ANGELES, Nov. 3.—Dan C. Newton, president of the Newton Process Manufacturing Co., Fullerton, Calif., who has been for several years inventing and manufacturing natural gasoline plant equipment, recently took off a week or two and devised a new incinerator for use at the home of the oil men. This new burner is unique in that it has separate compartments divided by grates for the burning of green and dry rubbish.

# ON THE LAZY BENCH



### Better To Suffer

A man went to his doctor and requested treatment for his ankle.

After a careful examination the doctor inquired: "How long have you been going about like this?"

"Two weeks."

"Why, man, your ankle is broken. How you managed to get around is a marvel. Why didn't you come to me at first?"

"Well, doctor, every time I say anything is wrong with me my wife declares I'll have to stop smoking."

—*Hercules Log Book.*

* * *

Visiting Doctor: "How is it, Sambo, that you and your large family keep so healthy?"

Sambo: "Well, suh, Ah tell you: we've done bought one of dose sanitary drinkin' cups, an' we all drink outen it."—*Union Oil Bulletin.*

* * *

There's always something. The better your brakes, the greater the danger to your rear fenders.

—*Stanolind Record*

* * *

They're pickin' up the pieces
With a dustpan and a rake
Because he used his horn
When he oughta used his brake.

—*Union Oil Bulletin*

* * *

Prison Guard: "Chief, th' guy in Cell Forty-five wants to confess."

Warden: "He does, eh? What does he think I am, a bloomin' magazine editor?"—*Stanolind Record.*

* * *

"Do you play golf?" he asked of the simple but gushing maiden.

"Dear me no," she bashfully replied. "I don't believe I should even know how to hold the caddie."

—*Union Oil Bulletin*

* * *

"It took you a long time to pull that fellow's tooth," said the dentist's assistant.

"Yes, he married the girl I loved."

—*Stanolind Record*

* * *

### Honest Confession

"Well," concluded the apartment house manager, "you say you have no children, phonograph or radio, and you don't keep a dog. You seem to be just the quiet tenant the owner insists on."

The prospective tenant smiled grimly. "I don't want to hide anything from you," he said. "You might tell the owner that my fountain pen squeaks a bit."

—*Power Specialist.*

First Partner: "In what position does your son wish to enter the business?"

Second Partner: "Well, so far as I can make out, he wants to start near the top and loaf upwards."

—*Union Oil Bulletin*

* * *

An African explorer says that elephants never die a natural death. It appears that pachyderms have much in common with pedestrians.

—*Stanolind Record*

* * *

### Not Guilty

Cop—Who was driving when you hit that car?

Drunk (triumphantly)—None of us; we was all on th' back seat.

—*Hercules Log Book.*

* * *

*Customer.* "Two eggs poached, medium; soft, buttered toast, not too hard; coffee, not too much cream."

*Waiter.* "Yes, sir. Would you like any special design on the dishes?"

—*Our Sun.*

* * *

### To Feel More Comfortable

Executioner (to condemned man in chair)—Is there anything you want before I turn the juice on?

Condemned—Yeah—loosen the laces on my left shoe; my corns are achin'.

—*Power Specialist.*

* * *

He was boring her to tears when in came her dog.

"Ah," he exclaimed, "have you taught him any more tricks since I was here last?"

"Yes," she said sweetly. "If you whistle he will bring your hat."

—*Union Oil Bulletin*

* * *

Clerk, to boss by telephone—"Listen, chief, I won't be able to motor back until Thursday."

"So you want a few more days of grace, eh?"

"No, sir—of Helen."

* * *

*Ike.* "Does your father pay much for coal?"

*Mike.* "No, we live across the alley from the power plant and I yell names at the firemen."

—*Our Sun.*

* * *

### It All Depends

Ike—How quickly can you stop your car?

Uke—It all depends on the size of the pedestrian. A big one stops me right away, but if he's undersized I drag him a ways.

—*Power Specialist.*


**Heavy Duty Folio**

**367—The best constructed folio we have developed. Made from the best 6-oz. smooth black cowhide. Comfortable handles made to carry all the weight, relieving the strain on the seams. Reinforced bottom protected with studs. Three pockets. Two inner cases may be carried.**

*Less 10% for Cash*

*Other styles in our FREE Catalog*

**L-U-C-E**

*Builders of Sales Luggage*

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*The*
**NATIONAL REFINING COMPANY**
PETROLEUM PRODUCTS

THREE MODERN REFINERIES:
Marietta, Ohio Refinery
operated on Pennsylvania Crude
Findlay, Ohio Refinery
operated on Ohio Crude
Coffeyville, Kansas Refinery
operated on Midcontinent Crude

National Headquarters
NATIONAL BLDG., CLEVELAND, O.

# This SIGN will tell a motorist you have *two reasons* why he should drive into your station.

**1st** *You have a motor oil of unexcelled quality at a right price.*

**2nd** *You have a sound, common-sense method of selling it.*

EVERY Authorized Opaline Dealer receives our Recommendation Index (based on the Sinclair Law of Lubrication) on which are listed cars, trucks, buses and taxis—and showing when the different grades of Opaline Motor Oil should be used. The Dealer asks the motorist how many miles his car has been driven—and then gives the motorist the correct grade of Opaline to fit the degree of wear in his engine, and seal its power.

May we tell you about this successful method of selling *correct lubrication* with the full line of Opaline Motor Oils?

SINCLAIR REFINING COMPANY, INC.

*Also Makers of Sinclair Gasoline and H-C Gasoline*

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Atlanta Boston Chicago Houston Kansas City

SINCLAIR OILS
REG U.S. PAT OFF.

**SINCLAIR OPALINE MOTOR OIL**

*Seals Power at every Degree of Wear*

*Entire contents copyrighted 1927 by Sinclair Refining Company, Inc.*

# Refinery - Tank Wagon Markets

National Petroleum News

# Demand is Steady for Mid-Continent Products and Prices Hold Up

Staff Special
TULSA, Nov. 5

**MID-CONTINENT refinery market prices fluctuated only slightly this week. Movement of all major commodities was sufficiently large in volume to keep refiners in a good position.**

The only new export business reported was 30 cars of 40-42 kerosene by an Oklahoma refiner at 4.50 cents a gallon. An export company continued to offer 6.50 and 6.625 cents, respectively, for 64-66, 390 end point and 64-66, 375 e.p. gasoline in north Texas provided the goods could be shipped by Nov. 12. The company entered the market about two weeks ago for approximately 1,500,000 gallons of the two grades.

The high gravity buying in that district has put refiners in good shape until around the middle of the month, and the export grades of gasoline are extremely scarce for spot shipment.

It might be added also that refiners in checking recent export buying in the Mid-Continent have placed the volume at 3,500,000 gallons in three weeks. In many quarters this estimate is considered conservative.

One export company was reported to be offering 6.375 cents for 64-66, 375 e.p. gasoline in north Texas, but with the other export company anxious to complete its cargo by Nov. 12 and offering higher prices the first mentioned company has been unable to get any goods this week.

Domestic demand for 58-60 U. S. Motor gasoline continued to be mostly for small lots, but the total volume was comparatively good. Little buying has been done for over November shipment and the opinion is that this situation is indicative of an active spot market through November.

Only in a few cases where small refiners who are poorly financed and need to do business mostly on sight draft orders, have there been recessions under 6 cents for U. S. Motor gasoline, at least in Oklahoma.

The salesmanager of a large Oklahoma refinery expressed what apparently is the consensus of opinion among the trade here, when he said the sensible refiner isn't going to throw a lot of gasoline on the market and run as much crude as possible at present when the outlook for the industry is brighter than it has been for a year.

"It is no secret," he said, "that crude oil is considerably tighter than it has been for some time and I am not surprised at the apparently reliable reports that premiums are being paid at present. Any change for the better in the crude situation is certainly going to be reflected in the gasolines and other refined products."

Kansas refiners report their business has been comparatively good this week for all gasolines. The Arkansas and Louisiana refiners also have been enjoying a good business and report little of goods is available for spot shipment. Arkansas gasoline has been made considerably tighter as a result of the explosion and fire a few weeks ago at the Lion Oil & Refining Co. and an explosion at the Root Refineries, Inc.

NATURAL gasoline manufacturers are wondering considerably this month about the outlook for their commodities. No large buying of grades A and AA has been reported. In some quarters those grades are reported rather hard to move. However one large manufacturer of grade AA reported this week his production for November has been sold and that some gasoline probably would have to be taken from storage. If orders came in later in the month as well as they did the first few days, he said, his company might have to buy.

Demand for grades BB and C has been considerably better than for the higher grade of goods. Goods have been bought both for shipment in the Mid-Continent and for export. Quotations for over November, however, have been sent out from one or two placed at slightly under the spot market prices.

At least three large refiners in Texas have bought kerosene this month to apply on their own station or customer orders. Goods are scarce in north Texas at present. Domestic demand for kerosene in Oklahoma has been quiet and in some quarters a warning was voiced that refiners might find themselves soon with too much goods on hand. One salesmanager declared, however, that refiners have witnessed this reasonal demand for kerosene too often to be caught at the end of the season with too large stocks.

LOUISIANA refiners report demand for kerosene is larger than supply and stocks are low.

Distillate prices were steady. Weather has not been cool long enough, refiners said to cause a draft on stocks already in consuming territory.

Gas oils, price and demand, also were unchanged. North Louisiana refiners who make a straw zero cold test gas oil said this week the demand for their product had increased and the bulk of the 32-36 straw zero gas oil was moving at 3.25 cents into differential territory, and around 2.875 to 3 cents, f.o.b. Shreveport for northern haul.

Stocks of fuel oil have increased. Prices have not changed, however, primarily because refiners believe changes in prices would not increase business.

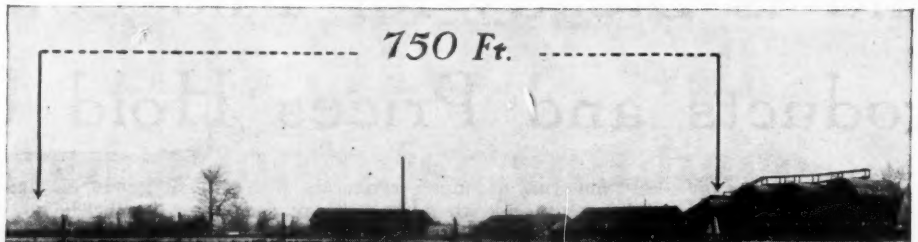
There has been considerable buying of fuel oil in Texas by large rail and industrial users. A large western company recently instructed its agents to take some options on approximately 700 cars of fuel oil for shipment over November, but a coal strike in Colorado looked nearer settlement and the company has made no further effort to exercise its options.

Demand for low cold test fuel oils of which there is a comparatively small volume in Oklahoma, has increased and prices are 5 to 15 cents a barrel more than the prices of ordinary fuel oil of the same gravity.

PRICES of Oklahoma neutral oils and cylinder stocks were generally unchanged. One or two companies have a few grades which they are trying to clean up before winter and a few price concessions have been made.

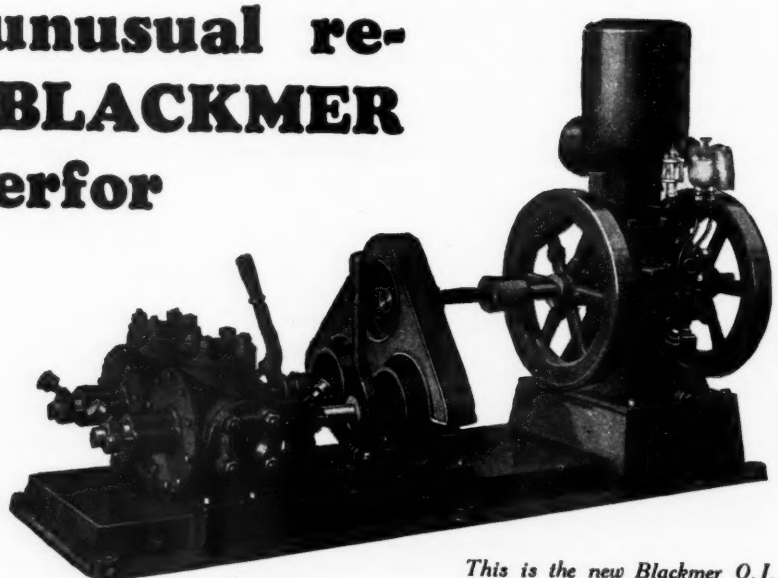
Demand for wax has slipped somewhat and two or three refiners have been forced to reduce prices slightly in order to keep their products moving.

*This cut shows a view of the Columbus Oil Co. station at Bucyrus, Ohio, where a Blackmer No. 6S engine driven unit has been in use since July 1921 without repairs or attention of any kind. These pumps draw gasoline overhead from tank car which can be seen at extreme left, a distance of 750 feet. The discharge is 50 feet long with 15 feet elevation.*




# 750 Ft. SUCTION
# 50 Ft. DISCHARGE
# 6 Years Service
# NO REPAIRS!

## A not unusual record of BLACKMER PUMP Perfor



*This is the new Blackmer O.J. Unit designed especially for oil jobbers service. Comes equipped with gas engine or electric motor drive, with or without space for firewall. Increased production enables us to sell this unit at a reduced price.*

**Blackmer Pump Co.**
**1809 Century Ave.**
**Grand Rapids, Michigan**

# Refinery Markets on Light Oils and Lubricants

**Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown**

***(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)***

## GASOLINE AND NAPHTHA

| PENNSYLVANIA | Prices Nov. 7 | Prices Oct. 31 | Prices Oct. 24 |
|---|---|---|---|
| 52-54 Naphtha | 8.25 – 8.50 | 8.25 – 8.50 | 8.25 – 8.50 |
| 54-56 Naphtha | 8.25 – 8.50 | 8.25 – 8.50 | 8.25 – 8.50 |
| 58-60 Gasoline | 8.00 – 8.25 | 8.00 – 8.25 | 8.00 – 8.375 |
| 60-62 Str.-run gasoline | 8.75 – 9.00 | 8.75 – 9.00 | 8.75 – 9.00 |
| 64-66 Str.-run gasoline | 9.25 – 9.75 | 9.25 – 9.75 | 9.25 – 9.75 |
| 68-70 Str.-run gas. 350-360 e.p. | 10.00 –10 25 | 10.00 –10.25 | 10.00 –10.25 |
| **OKLAHOMA** | | | |
| 48-50 450 e.p. naphtha | 5.75 – 6.00 | 5.75 – 6.00 | 5.75 – 6.00 |
| 50-52 450 e.p. naphtha | 5.75 – 6.00 | 5.75 – 6.00 | 5.75 – 6.00 |
| 56-58 450 e.p. gasoline | 6.00 | 6.00 | 6.00 |
| 58-60 450 e.p. gasoline | 6.00 | 6.00 | 6.00 |
| 56-58 U. S. Motor, 437 e.p. | **6.00 – 6.125 | **6.00 – 6.125 | **6.00 – 6.125 |
| 58-60 U. S. Motor, 437 e.p. | 6.00 – 6.25 | 6.00 – 6.25 | 6.00 – 6.25 |
| 60-62 437 e.p. gasoline | **6.125– 6.375 | **6.125– 6.375 | **6.25 – 6.50 |
| 60-62 400 e.p. gasoline | **6.50 – 6.75 | **6.50 – 6.75 | **6.50 – 6.75 |
| 64-66 390 e.p. gasoline | **6.75 | **6.75 | **6.875 |
| 64-66 375 e.p. gasoline | **7.00 – 7.125 | **7.00 – 7.125 | **7.00 – 7.25 |
| 68-70 350-360 e.p. gasoline | 7.125– 7.375 | 7.00 – 7.25 | 7.125– 7.375 |
| **KANSAS** (F. O. B. refinery Kansas destination) | | | |
| 58-60 U. S. Motor 437 e.p. | 6.25 – 6.50 | 6.25 – 6.50 | 6.50 |
| 60-62 400 e.p. gasoline | 7.00 – 7.125 | 7.00 – 7.25 | 7.00 – 7.125 |
| 64-66 375 e.p. gasoline | 7.50 | 7.00 | 7.50 |
| **NORTH TEXAS** | | | |
| 48-52 450 e.p. naphtha | †6.00 | †6.00 | †6.00 |
| 56-58 450 e.p. gasoline | 5.875 | 5.875 | 5.875 |
| 58-60 450 e.p. gasoline | 5.875 | 5.875 | 5.875– 6.125 |
| 58-60 U. S. Motor 437 e.p. | 6.00 | 6.00 | 6.00 – 6.125 |
| 60-62 400 e.p. gasoline | 6.375 | 6.375 | 6.375 |
| 64-66 390 e.p. gasoline | 6.50 | 6.50 | 6.50 |
| 64-66 375 e.p. gasoline | 6.75 – 6.875 | 6.625– 6.875 | 6.625– 6.875 |
| 68-70 350-360 e.p. gasoline | 7.00 – 7.125 | 7.00 | 7.00 – 7.25 |
| **NORTH LOUISIANA** (For Louisiana and differential territory destination) | | | |
| 58-60 U. S. Motor gasoline | 6.50 | 6.50 – 6.625 | 6.50 – 6.625 |
| **ARKANSAS** (For Arkansas intrastate shipment) | | | |
| 56-58 450 e.p. gasoline | 6.25 | 6.25 | 6.25 |
| 58-60 450 e.p. gasoline | 6.25 | 6.25 | 6.25 |
| 58-60 U. S. Motor 437 e.p. | 6.50 – 6.75 | 6.50 – 6.75 | 6.75 |
| **ARKANSAS** (F. O. B. Arkansas refineries for interstate shipment) | | | |
| 58-60 U. S. Motor 437 e.p. | **6.375– 6.625 | **6.375– 6.625 | **6.375– 6.625 |
| **CALIFORNIA** | | | |
| *54-58 U.S. Motor 437 e.p. | 7.00 – 7.50 | 7.00 – 8.00 | 7.00 – 8.00 |
| *58-61 U.S. Motor 437 e.p. | 7.50 – 8.50 | 8.00 – 9.00 | 8.00 – 9.00 |
| *42-45 Eng. dis. 445-480 e.p. | 6.50 – 7.00 | 6.50 – 7.00 | 6.50 – 7.00 |

*2c tax to be added if used in state.

## NATURAL GASOLINE

(Note: End point of all grades, not over 375° F. Since Oct. 1, 1927 all naturals must pass corrosion test.)

| OKLAHOMA | | | |
|---|---|---|---|
| Grade AA, 80-87.9, 90% Recovery | 5.75 – 6.00 | †6.00 | 6.00 |
| Grade A, 72-79.9, 90% Recovery | 5.75 – 6.00 | †6.00 | 6.00 |
| Grade BB, 84-92, 85% Recovery | 5.625 | 5.75 | 5.75 |
| Grade B, 76-83.9, 85% Recovery | 5.625 | 5.75 | 5.75 |
| Grade C, 80-90, 78% Recovery | 5.50 – 5.625 | 5.625 | 5.625 |
| **NORTH TEXAS** (F. O. B. Breckenridge) | | | |
| Grade AA, 80-87.9, 90% Recovery | 5.75 – 6.00 | 6.00 | 6.00 – 6.125 |
| Grade A, 72-79.9, 90% Recovery | 5.75 – 6.00 | 6.00 | 6.00 – 6.125 |
| Grade BB, 84-92, 85% Recovery | 5.625– 5.75 | 5.75 – 5.875 | 5.75 |
| Grade B, 76-83.9, 85% Recovery | 5.625– 5.75 | 5.75 – 5.875 | 5.75 |
| Grade C, 80-90, 78% Recovery | 5.50 – 5.625 | 5.625 | 5.625 |
| **NORTH LOUISIANA** (F. O. B. Monroe District) | | | |
| Grade AA | †6.375– 6.50 | †6.375– 6.50 | †6.375– 6.50 |
| Grade BB | †6.125 | †6.125 | †6.125 |
| Grade C | †6.125 | †6.125 | †6.125 |
| **CALIFORNIA** | | | |
| 75-85, 375-390 e.p. blend. | 9.50 –10.00 | 9.50 –10.00 | 9.50 –10.00 |

## MOTOR FUEL BLENDS

| PENNSYLVANIA | | | |
|---|---|---|---|
| 68-70 Blend 437 e.p. | Prices | ..... | ..... |
| 64-66 Blend 437 e.p. | temporarily | ..... | ..... |
| 60-62 Blend 437 e.p. | discontinued | ..... | ..... |
| **OKLAHOMA** | | | |
| 64-66 Blend 437 e.p. | 6.00 – 6.125 | 6.00 – 6.125 | 6.00 – 6.125 |

## BURNING OILS

| PENNSYLVANIA | | | |
|---|---|---|---|
| 45 w.w. kerosene | 6.50 – 6.875 | 6.625– 7.00 | 6.75 – 7.00 |
| 46 w.w. kerosene | 7.00 – 7.50 | 7.25 – 7.50 | 7.25 – 7.50 |
| 47 w.w. kerosene | 7.25 – 7.75 | 7.25 – 7.75 | 7.25 – 7.75 |
| **OKLAHOMA** | | | |
| 41-43 w.w. kerosene | 4.625– 4.75 | 4.625– 4.75 | 4.625– 4.75 |
| 42-44 w.w. kerosene | 5.00 – 5.25 | 5.00 – 5.25 | 5.00 – 5.25 |
| **KANSAS** (F. O. B. refinery Kansas destination) | | | |
| 41-43 w.w. kerosene | 4.875– 5.25 | 4.875– 5.25 | 4.875– 5.25 |
| 42-44 w.w. kerosene | 5.625– 5.75 | 5.625– 5.75 | 5.625– 5.75 |
| **NORTH TEXAS** | | | |
| 40-42 w.w. kerosene | †4.50 | †4.50 | †4.375– 4.50 |
| 41-43 w.w. kerosene | †4.75 | †4.75 | †4.625– 4.75 |
| **NORTH LOUISIANA** (For Louisiana and differential territory destination) | | | |
| 41-43 w.w. kerosene | 5.00 – 5.125 | 5.00 | 5.00 |
| **ARKANSAS** (For intrastate shipment only) | | | |
| 42-44 kerosene | 5.00 | 5.00 | 5.00 |
| **ARKANSAS** (F. O. B. Arkansas refineries for interstate shipment) | | | |
| 42-44 kerosene | 4.75 – 5.00 | 4.75 – 5.00 | 4.75 – 5.00 |
| **CALIFORNIA** | | | |
| 38-40 w.w. kerosene | 5.00 – 5.50 | 5.00 – 5.50 | 5.00 – 5.50 |

## NEUTRAL OIL

| PENNSYLVANIA Vis. | Prices Nov. 7 | Prices Oct. 31 | Prices Oct. 24 |
|---|---|---|---|
| (Viscosity at 70°F.) | | | |
| 200 No. 3 Assoc. Filt. | 34.00 –34.50 | 34.00 –34.50 | 34.00 –34.50 |
| 180 No. 3 Assoc. Filt. | 31.00 –32.00 | 31.00 –32.00 | 32.00 –32.50 |
| 150 No. 3 Assoc. Filt. | 27.25 –28.00 | 27.25 –27.75 | 27.00 –28.00 |
| (Non Viscous) | | | |
| 34 Grav. 330-340 Flash | 7.25 – 7.75 | 7.25 – 7.75 | 7.25 – 7.75 |
| 36 Min. Neut. 300-305 Flash | 6.50 – 7.00 | 6.50 – 7.00 | 6.50 – 7.00 |
| **OKLAHOMA** | | | |
| Vis. Color (Viscosity at 100°F.) | | | |
| 100—No. 2 | 6.00 – 6.50 | 6.00 – 6.50 | 6.00 – 6.50 |
| 150—No. 3 | 8.25 – 8.50 | 8.25 – 8.50 | 8.25 – 8.50 |
| 150—No. 4 | 8.00 – 8.50 | 8.00 – 8.50 | 8.00 – 8.50 |
| 180—No. 3 | 9.50 –10.00 | 9.50 –10.00 | 9.50 –10.00 |
| 180—No. 4 | 9.50 – 9.75 | 9.50 – 9.75 | 9.50 – 9.75 |
| 180—No. 5 | 9.25 – 9.75 | 9.25 – 9.75 | 9.25 – 9.75 |
| 200—No. 3 | 9.50 –11.00 | 9.50 –11.00 | 9.50 –11.00 |
| 200—No. 4 | 9.50 –10.75 | 9.50 –10.75 | 9.50 –10.75 |
| 200—No. 5 | 8.50 –10.50 | 8.50 –10.50 | 8.50 –10.50 |
| 220—No. 3 | 12.50 –13.50 | 12.50 –13.50 | 12.50 –13.50 |
| 220—No. 4 | 12.25 –12.50 | 12.25 –12.50 | 12.25 –12.50 |
| 220—No. 5 | 11.50 –12.00 | 11.50 –12.00 | 11.50 –12.00 |
| 240—No. 3 | 14.00 | 14.00 | 14.00 |
| 240—No. 4 | 13.50 | 13.50 | 13.50 |
| 240—No. 5 | 12.00 –13.00 | 12.00 –13.00 | 12.00 –13.00 |
| 280—No. 3 | 16.00 –17.00 | 16.00 –17.00 | 16.00 –17.00 |
| 280—No. 4 | 15.25 | 15.25 | 15.25 |
| 280—No. 5 | 14.00 –15.00 | 14.00 –15.00 | 14.00 –15.00 |
| 300—No. 5-6 | 17.00 | 17.00 | 17.00 |
| **GULF COASTAL** | | | |
| Vis. Color (Viscosity at 100° F., pour test 0) | | | |
| 100—No. 2 Unfilt. Pale | 7.00 – 7.50 | 7.00 – 7.50 | 7.00 – 7.50 |
| 200—No. 3 Unfilt. Pale | 9.50 –10.00 | 9.50 –10.00 | 9.50 –10.00 |
| 300—No. 3 Unfilt. Pale | 10.00 –11.00 | 10.00 –11.00 | 10.00 –11.00 |
| 500—No. 3½ Unfilt. Pale | 12.00 –12.50 | 12.00 –12.50 | 12.00 –12.50 |
| 750—No. 4 Unfilt. Pale | 14.50 –15.00 | 14.50 –15.00 | 14.50 –15.00 |
| 200—No. 5½ Red Oil | 8.00 – 8.50 | 8.00 – 8.50 | 8.00 – 8.50 |
| 300—No. 5½ Red Oil | 9.50 –10.00 | 9.50 –10.00 | 9.50 –10.00 |
| 500—No. 6 Red Oil | 10.50 –11.00 | 10.50 –11.00 | 10.50 –11.00 |
| 750—No. 6 Red Oil | 13.00 –13.50 | 13.00 –13.50 | 13.00 –13.50 |
| **CALIFORNIA** | | | |
| Vis. Color (Viscosity at 100°F.) | | | |
| 100—No. 2 | 9.00 – 9.50 | 9.00 – 9.50 | 9.00 – 9.50 |
| 100—No. 3 | 7.50 – 8.00 | 7.50 – 8.00 | 7.50 – 8.00 |
| 200—No. 3 | 9.50 –10.00 | 9.50 –10.00 | 9.50 –10.00 |
| 300—No. 3 | 10.50 –11.00 | 10.50 –11.00 | 10.50 –11.00 |
| 450—No. 3-3½ | 13.00 –13.50 | 13.00 –13.50 | 13.00 –13.50 |
| 550—No. 3-3½ | 14.50 –15.00 | 14.50 –15.00 | 14.50 –15.00 |
| 600—No. 3-3½ | 15.00 –15.50 | 15.00 –15.50 | 15.00 –15.50 |
| 100—No. 5 | 6.50 | 6.50 | 6.50 |
| 200—No. 5 | 8.00 – 8.50 | 8.00 – 8.50 | 8.00 – 8.50 |
| 300—No. 5 | 9.00 – 9.50 | 9.00 – 9.50 | 9.00 – 9.50 |
| 400—No. 5 | 11.00 –11.50 | 11.00 –11.50 | 11.00 –11.50 |
| 500—No. 5 | 11.00 –11.50 | 11.00 –11.50 | 11.00 –11.50 |
| 600—No. 5 | 12.00 –12.50 | 12.00 –12.50 | 12.00 –12.50 |
| 700—No. 7 | 14.00 –14.50 | 14.50 –14.50 | 14.00 –14.50 |

## CYLINDER STOCKS

| **OKLAHOMA** | | | |
|---|---|---|---|
| 190-200 Vis. at 210° Brt. St. | 31.00 –32.00 | 31.00 –32.00 | 31.00 –32.00 |
| 150-160 Vis. at 210° Brt. St. | 25.00 –27.00 | 25.00 –27.00 | 25.00 –27.00 |
| 600 E St. 140-150 Vis.-210° | 17.00 –18.00 | 17.00 –18.00 | 17.00 –18.00 |
| 600 St. Ref. Olive Green | 9.00 –10.00 | 9.00 –10.00 | 9.00 –10.00 |
| 600 St. Ref. Dark Green | 7.00 – 8.00 | 7.00 – 8.00 | 7.00 – 8.00 |
| Black Oil | 5.00 | 5.00 | 5.00 |
| **PENNSYLVANIA** (1-inch Immersion Test) | | | |
| 600 Steam Refined | 9.75 –10.50 | 10.00 –10.50 | 10.00 –10.50 |
| 650 Steam Refined | 12.00 –13.00 | 12.00 –13.00 | 11.75 –12.50 |
| 600 Flash | 16.50 –17.50 | 16.50 –17.50 | 16.50 –17.50 |
| 625 Flash | 27.00 –28.00 | 27.00 –28.00 | 27.00 –28.00 |
| 600 Warren E | 17.50 –18.50 | 18.50 –19.50 | 18.50 –19.50 |
| 600 Oil City E | 16.50 –17.00 | 16.50 –17.00 | 16.50 –17.00 |
| 600 D Filtered | 24.50 –25.50 | 24.50 –25.50 | 25.50 –26.00 |
| Cold Test Stocks (brt. filt.) | 31.50 –32.00 | 32.50 –33.00 | 33.00 –33.50 |
| Cold Test Stock (dark filt.) | 30.00 | 30.00 –31.00 | 31.00 –31.50 |

(Note—Prices of total immersion test goods average 1 to 3 cents per gallon higher)

†PRICES NOMINAL ††ONLY ONE REFINER QUOTING *QUOTATIONS ONLY **REPRESENTS BOTH SALES AND QUOTATIONS

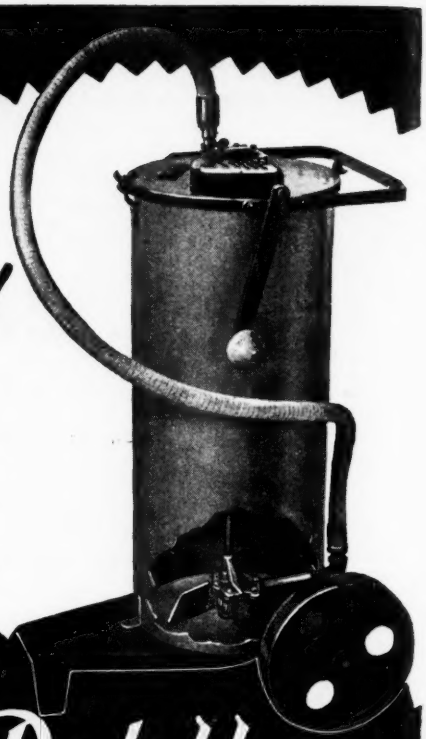
# It's Easy to Serve Grease Now!

The twelve-inch head is easily removed allowing ample room for refilling.

Royway Portable Grease Server eliminates old fashioned methods—cuts costs—saves labor—and increases sales. The patented rotary gear pump guarantees smooth, solid measured delivery in any temperature with complete absence of air pockets. Simple—clean—efficient.

**[Approved by the Director of Standards for Massachusetts]**

*Write for descriptive catalog to*
ROY MANUFACTURING COMPANY
Quincy, Massachusetts



# The ROYWAY Portable Grease Server

## TANKS, BARRELS, PUMPS, EQUIPMENT

THE following is a partial list of the products which we are regularly supplying to the oil trade. Do not hesitate to send us your inquiry on any special weight or out of the ordinary equipment or any other special steel plate construction:

Field Tanks, up to 55,000 barrels
Bulk Storage Tanks and equipment complete
Fuel Oil Tanks, all types and sizes
Truck Tanks, oval, round, square, or semi-rectangular
Fuel Oil Truck Tanks, insulated and with heating arrangement
Lubricating Oil Plants, including complete compounding equipment
Grease and Soap Kettles, steam jacketed, with air or mechanical agitator
Steel Drums, complete line
Rotary and Plunger Type Pumps, valves, and fittings

## BROWN SHEET IRON & STEEL CO.

**964 Berry Avenue** **St. Paul, Minn.**

**Tear off this Coupon and Mail it *Today***

Interested in.....

Size..... Truck.....

Other Equipment.....

Name.....

Address.....

# Refinery Markets on Wax and Heavy Oil Products

**Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown**

***(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)***

## WAX

| PENNSYLVANIA | Prices Nov. 7 | Prices Oct. 31 | Prices Oct. 24 |
|---|---|---|---|
| Per Pound. New York | | | |
| 122-124 white crude scale | 3.125– 3.25 | 3.125– 3.25 | 3.125– 3.25 |
| 124-126 white crude scale | 3.25 | 3.25 | 3.25 |
| **OKLAHOMA** | | | |
| **124-126 Semi-refined.. | 2.625– 2.875 | 2.75 – 3.125 | 2.75 – 3.125 |
| **CALIFORNIA** | | | |
| White crude scale, per pound, ton lots..... | 6.00 – 6.50 | 6.00 – 6.50 | 6.00 – 6.50 |

## FUEL OIL

| PENNSYLVANIA | | | |
|---|---|---|---|
| 36-40 fuel oil..... | 4.50 – 4.75 | 4.625– 4.75 | 4.50 – 4.75 |
| 30-34 fuel oil..... | 4.50 – 4.625 | 4.50 – 4.625 | 4.50 – 4.625 |
| 28-32 fuel oil..... | 4.50 – 4.625 | 4.50 – 4.625 | 4.50 – 4.625 |
| **OKLAHOMA** | | | |
| 38-40 straw distillate..... | 3.25 | 3.25 | 3.25 |
| 36-38 straw distillate..... | 3.00 | 3.00 | 3.00 |
| *32-36 gas oil, straw..... | †2.625 | †2.625 | †2.625 |
| *32-36 dark gas oil..... | 2.50 – 2.625 | 2.50 – 2.625 | 2.50 – 2.625 |
| 28-30 fuel oil (in bbls.)... | $0.925– 0.975 | $0.925– 0.975 | $0.95 – 1.00 |
| 26-28 fuel oil (in bbls.)... | $0.875– 0.90 | $0.875– 0.90 | $0.90 – 0.95 |
| 24-26 fuel oil (in bbls.)... | **$0.85 | **$0.85– 0.875 | **$0.875– 0.90 |
| 22-26 fuel oil (in bbls.)... | **$0.85 | **$0.85 | **$0.85 |
| 18-22 fuel oil (in bbls.)... | **$0.75 | **$0.75 | **$0.75– 0.80 |
| 16-18 fuel oil (in bbls.)... | **$0.725– 0.75 | **$0.725– 0.75 | **$0.75 |
| 14-16 fuel oil (in bbls.)... | **$0.725– 0.75 | **$0.725– 0.75 | **$0.75 |

*Zero cold test low flash goods sell for ⅛ to ¼ cent more per gallon.

| KANSAS (F. O. B. refinery Kansas destination.) | | | |
|---|---|---|---|
| 38-40 straw distillate..... | 3.50 – 3.75 | 3.50 – 3.75 | 3.75 |
| 36-38 straw distillate..... | 3.25 | 3.25 | 3.25 – 3.50 |
| 32-36 gas oil..... | 2.75 – 2.875 | 2.75 – 2.875 | 2.75 – 3.00 |
| 18-22 fuel oil ..... | *$0.85– 0.90 | *$0.85– 0.90 | *$0.95– 1.05 |
| 24-26 fuel oil..... | *$0.95 | *$0.95 | *$0.85– 0.90 |
| **NORTH TEXAS** | | | |
| 38-40 straw distillate..... | 3.00 – 3.125 | 3.125 | 3.125 |
| 32-36 gas oil, cracked.... | 2.375– 2.50 | 2.50 | 2.50 |
| 32-36 gas oil, uncracked.. | 2.50 | 2.50 – 2.625 | 2.50 – 2.625 |
| 24-26 fuel oil (in bbls.)... | $0.85 – 0.875 | $0.85– 0.875 | $0.85 – 0.875 |

| GULF COASTAL | Prices Nov. 7 | Prices Oct. 31 | Prices Oct. 24 |
|---|---|---|---|
| Fuel (in bbls.)..... | $1.60 –$1.65 | $1.60 –$1.65 | $1.60 –$1.65 |
| Gas oil..... | 4.25 – 4.50 | 4.25 – 4.50 | 4.25 – 4.50 |
| **NORTH LOUISIANA** (For Louisiana and differential territory destination) | | | |
| 32-36 gas oil, dark..... | 3.00 | 3.00 – 3.25 | 3.00 – 3.25 |
| 32-36 gas oil, straw..... | 3.00 – 3.25 | 3.00 – 3.25 | 3.00 – 3.25 |
| 16-20 fuel oil (in bbls.)... | $1.00 – 1.025 | $1.05 – 1.10 | $1.05 – 1.10 |
| **ARKANSAS** (For Arkansas intrastate shipment only) | | | |
| 32-36 gas oil..... | 3.00 – 3.25 | 3.00 – 3.25 | 3.00 – 3.25 |
| 28-32 gas oil..... | 2.875– 3.00 | 2.875– 3.00 | 2.875– 3.00 |
| Road oil..... | $1.25– 1.30 | $1.25 – 1.30 | $1.25 – 1.30 |
| **ARKANSAS** (F. O. B. Arkansas refineries for interstate shipment) | | | |
| 28-32 gas oil..... | 2.75 – 2.875 | 2.75 – 2.875 | 2.75 – 2.875 |
| Smackover crude fuel.... | $1.10 – 1.15 | $1.10 – 1.15 | $1.10 – 1.15 |
| Road oil..... | $1.15 – 1.25 | $1.15 – 1.25 | $1.15 – 1.25 |
| **CALIFORNIA** (F. O. B. San Joaquin Valley. At San Francisco, 4c per bbl. more) | | | |
| 14-18 fuel oil (in bbls.)... | $0.60 –$0.75 | $0.65 –$0.90 | $0.65 –$0.90 |
| 14-18 Bunker oil (in bbls.) | $0.85 –$1.00 | $0.85 –$1.00 | $0.85 –$1.00 |
| 30-34 gas oil (in bbls.)... | $0.95 –$1.05 | $0.90 –$1.00 | $0.90 –$1.00 |
| 27 Plus Diesel oil (in bbls.) | $0.85 –$1.00 | $0.85 –$1.00 | $0.85 –$1.00 |

## PETROLATUMS

| PENNSYLVANIA (In cents per pound in tank cars; in barrels, in car lots ¾c per pound more.) | | | |
|---|---|---|---|
| Snow White..... | 9.25 | 9.25 | 9.25 |
| Lily White..... | 8.25 | 8.25 | 8.25 |
| Cream White..... | 7.25 | 7.25 | 7.25 |
| Light Amber..... | 5.50 | 5.50 | 5.50 |
| Amber..... | 4.50 | 4.50 | 4.50 |
| Red..... | 3.75 | 3.75 | 3.75 |
| Green No. 5 color..... | 3.50 | 3.50 | 3.50 |

## **PETROLEUM COKE

| (Per ton in car lots) | | | |
|---|---|---|---|
| Lump..... | $5 | $5 | $5 |
| Still run..... | $3 | $3 | $3 |
| Breeze..... | $2 | $2 | $2 |

†PRICES NOMINAL ††ONLY ONE REFINER QUOTING *QUOTATIONS ONLY **REPRESENTS BOTH SALES AND QUOTATIONS

## Independent Oil & Gas Co. Puts Out New Stock

Staff Special

TULSA, Nov. 6.—Rumors of the entrance of the Waite Phillips interests into the Independent Oil & Gas Co. were given impetus when the First Trust & Savings Bank of Tulsa, of which Mr. Phillips is chairman of the directorate, announced that it had underwritten a stock issue for the Independent. The new stock, 150,000 shares, is to be offered to stockholders of record of Nov. 22 at $28 per share. Expiration date on the subscription rights is Dec. 12.

The First Trust & Savings bank is the first Tulsa house ever to handle alone a stock issue of this proportion. The bank is closely allied with the First National Bank, of Tulsa, of which Waite Phillips is a director.

Following the sale of the Waite Phillips Oil & Gas Co. for a price said to have been $23,000,000, Waite Phillips was inactive in the oil business for about a year. The company which he had built up was merged with the Barnsdall companies and re-financed. Mr. Phillips devoted that year to ranching and his various business interests. Then he appeared on the scene once more with the Philmack Oil Co. Recent reports, not confirmed by Phillips or his associates, are to the effect the Philmack and Independent companies would be merged and a third company, the Gilliland Oil Co., has also been mentioned. Col. P. J. Hurley, former president of the Gilliland, is now president and trust officer of the First Trust & Savings bank. Fred Phillips, brother of Waite, Frank and L. E. Phillips, is president of the Gilliland. Persons closely in touch with the Gilliland company deny, however, that any merging of interests is in contemplation.

## Report on Gasoline Prices Ready in December

By Special Correspondent

WASHINGTON, Nov. 7.—The Federal Trade Commission's report on its investigation of the prices of gasoline will be ready in about a month. Congress will begin its sessions Dec. 5. The report will probably come out in the first week of the session.

The plan to have it made public in the recess of congress has been definitely abandoned. Whether it was put on the shelf on account of the fact that the report was called for by the senate and not primarily by order of the president has not been revealed.

## Independent Offers Stock To Present Holders

NEW YORK, Nov. 5.—Independent Oil & Gas Co. is offering stockholders of Nov. 9 record rights to subscribe to 150,000 shares of capital stock at $28 a share. Rights expire Dec. 7. This stock will bring Independent's total outstanding up 650,000 shares.

Stockholders may subscribe for the new stock at the rate of 30 per cent of their Nov. 9 holdings. The issue will bring to the company $4,200,000.

E. H. Moore, president, in a letter to stockholders said the company's production recently reached 31,000 barrels a day and at present is between 25,000 and 26,000 barrels a day. It has been necessary to store considerable oil in the last few months, he wrote. Stored crude of the company is valued at more than $1,500,000.

In March the company sold $6,500,000 of 12-year 6 per cent convertible debentures.

---

HOUSTON, Nov. 7.—Colder weather in the north is bringing greater demand for Gulf Coastal lubricants of the lighter viscosity grades. The increased call is principally for the 200 and 300 viscosity goods. Prices are unchanged over the past week.

# Buying of Motor Gasoline is Good In Chicago Resale Market

Staff Special
CHICAGO, Nov. 5

GOOD demand for 58-60 U. S. Motor gasoline was reported all week in the Chicago resale market. Steady demand for small lots totaled considerably. Several sellers said their U. S. Motor gasoline business was better than for several weeks. Others said business was about the same as last week.

Selling prices of 58-60 U. S. Motor gasoline ranged 6 to 6.125 cents. Several sellers reported sales at 6.25 cents. One refiner advanced his quotations from 6.125 to 6.25 cents today.

Demand for the higher gravity gasolines was fairly good. Prices were steady. Several of the trade reported better demand for U. S. Motor than for high test gasolines, while others reported the opposite, especially late in the week since the cold wave in Standard Oil Co. of Indiana territory. The 60-62, 437 e.p. gasoline sold mostly at 6.25 to 6.375 cents, with some sales reported at 6.125 cents. The 60-62, 400 e.p. material was at 6.50 to 6.75 cents all week. The 64-66, 375 e.p. gasoline continued to sell at 7 to 7.125 cents. A few sellers were asking 7.25 cents.

Kerosene was quiet at 4.50 to 4.75 cents for 41-43 water white. Most sales were at 4.625 cents.

Distillate demand was fairly good this week. Prices were steady with 38-40 straw 3.25 to 3.375 cents.

Fairly good demand for gas oils was reported. Except in a few cases 2.625 cents was bottom. Ordinary dark gas oil was unchanged at 2.625 cents. Dark gas oil with a zero cold test was moving mostly at 2.75 cents. Some sales were reported at 2.625 and 2.875 cents. The 32-36 straw zero gas oil was comparatively scarce, reports from many sources indicated. Prices for this grade continued at 3 to 3.125 cents.

Good fuel oil buying by industrial companies was reported. Prices were steady. The 28-30 fuel sold at $1.00 to $1.05. The 24-26 fuel oil continued to move at $0.85 to $0.875 and 22-26 at $0.85. The 18-22 fuel oil sold at $0.775 to $0.825, with most of trade asking $0.80. Some of this grade moved at $0.75. Quotations on Smackover crude fuel remained steady at $1.025 to $1.075.

Mostly fair weather with brief periods of precipitation throughout the week, is the official forecast for the S. O. Indiana territory next week. Temperatures will be below normal the first part of the week but will be higher later.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*Petroleum Markets-Every Day*

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**CHICAGO—35 E. Wacker Drive**
**NEW YORK—342 Madison Ave.**
**CLEVELAND—714 Penton Bldg.**


### Eastern Kentucky Refinery Market

ASHLAND, Nov. 7.—Prices in eastern Kentueky refinery market on Oct. 31 and Nov. 7 were:

| | Nov. 7 | Oct. 31 |
|---|---|---|
| 60-62, 400-425 e.p. gasoline | 9.25 | 9.25 |
| 64-66, 375-390 e.p. gasoline | 9.75 | 9.50 |
| 68-70, 350-360 e.p. gasoline | None ..... | available 10.00 |
| 41-43 kerosene ..... | 6.875 | 6.875 |
| 34-36 gas oil ..... | 4.625 | 4.625 |
| 24-26 fuel oil ..... | 3.25 | 3.25 |

## Foreign Opportunities

Reserved information may be obtained from the Bureau of Foreign and Domestic Commerce, Washington, and its district and cooperative offices by duly registered firms and individuals upon written request by opportunity number. The Bureau does not furnish credit ratings or assume responsibility as to the standing of foreign inquirers; the usual precautions should be taken in all cases, and where no references are offered it does not necessarily imply that satisfactory references could not be given. Correspondence may be in English unless otherwise stated.

27924.—**Paraffin**, Tegal, Java, purchase.

27925.—**Gasoline**, Paris, France, agency.

27926.—**Paraffin**, Madrid, Spain, agency.

27927.—**Motor oils**, Cairo, Egypt, agency.

## Week's Price Changes Tank Wagon Markets

### Gasoline Changes

**Standard of New York**—T.w. and s.s. prices gasoline advanced 1 cent, Maine, covering tax increase to 4 cents, Oct. 29.

## Richfield to Furnish Shipping Board Oil

WASHINGTON, Nov. 5.—Contracts for supplying the fuel oil requirements of Shipping Board vessels operating in the Pacific during the 12-month period beginning Nov. 7, 1927, have been awarded the Richfield Oil Co. of Los Angeles.

The major item is for 2,750,000 barrels of oil to be delivered to Shipping Board tankers at the seller's terminal at San Pedro. The price for this amount is 78½ cents per barrel. The amount includes oil for bunkering tankers loading at the terminal.

A second item is 750,000 barrels for bunkering Shipping Board vessels at the San Pedro terminal. In cases where it is possible for vessels to receive the oil at the terminal, the price is 78½ cents per barrel, and in cases where it is necessary to bring the oil by barge to ship side the price is 83 cents per barrel.

All other bids were rejected.

### Equipment Man Goes To Tulsa

LOS ANGELES, Nov. 5.—G. M. Anderson, of the sales department of Baker Casing Shoe Co. in California, has been named special Mid-Continent representative of the company, with headquarters at 220 E. Brady st., Tulsa. Mr. Anderson, accompanied by T. Sutter, secretary of the company, will leave here Nov. 10 for Tulsa. Mr. Sutter then will go to New York and later attend the A.P.I. meeting in Chicago, planning to arrive back home not later than Dec. 20.

### Skimming Plant Escapes Blast

TULSA, Nov. 3.—An explosion at the Root Refineries, Inc., El Dorado, Ark. at 11 a. m. today killed one refinery worker and injured five others, none of them seriously. The blast put two Dubbs units out of commission. The skimming plant was not damaged. Repairs will be rushed on the Dubbs units, it was reported.

TULSA, Nov. 4.—J. Arthur Anson, president of Altitude Petroleum Co., is making an extensive trip through Illinois, Michigan and Indiana points, stopping at conventions in Chicago and West Baden, Ind., introducing the new anti-knock gasoline made at the Altitude's Dubbs pressure plant at Grandfield, Okla. The plant is running approximately 250 barrels daily.

# Tank Wagon, Service Station Markets for Gasoline and Kerosene In United States Territories and Canada

***(OIL PRICE HANDBOOK has t.w. and s.s. markets for whole year arranged for quick referenee)***

## These Prices In Effect November 7, 1927

### S.O. NEW JERSEY TERRITORY

| | Gasoline T.W. | Tax | Total T.W. | S.S. | Oil T.W. |
|---|---|---|---|---|---|
| Atlantic City, N. J. | 16 | 2 | 18 | 20 | 14 |
| Newark, N. J. | 16 | 2 | 18 | 20 | 14 |
| Annapolis, Md. | 16 | 4 | 20 | 23 | 12 |
| Baltimore, Md. | 16 | 4 | 20 | 23 | 10 |
| Cumberland, Md. | 16 | 4 | 20 | 23 | 14 |
| Washington, D. C. | 16 | 2 | 18 | 21 | 12 |
| Danville, Va. | 16 | 4½ | 20.5 | * | 14 |
| Norfolk, Va. | 16 | 4½ | 20.5 | 23.5 | 12 |
| Richmond, Va. | 14 | 4½ | 18.5 | 21.5 | 14 |
| Roanoke, Va. | 16 | 4½ | 20.5 | 23.5 | 14 |
| Petersburg, Va. | 16 | 4½ | 20.5 | 23.5 | 14 |
| Charleston, W. Va. | 16 | 4 | 20 | 23 | 14 |
| Keyser, W. Va. | 16 | 4 | 20 | * | 14 |
| Parkersburg, W. Va. | 13 | 4 | 17 | 20 | 14 |
| Wheeling, W. Va. | 16 | 4 | 20 | 23 | 14 |
| Charlotte, N. C. | 16 | 4 | 20 | 23 | 14 |
| Hickory, N. C. | 16 | 4 | 20 | 23 | 14 |
| Mt. Airy, N. C. | 16 | 4 | 20 | 23 | 14 |
| Salisbury, N. C. | 16 | 4 | 20 | 23 | 14 |
| Charleston, S. C. | 15 | 5 | 20 | 23 | 14 |
| Columbia, S. C. | 15 | 5 | 20 | 23 | 14 |

*Dealers set own prices. S. O. New Jersey does not operate station.

### S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

| | | | | | |
|---|---|---|---|---|---|
| *New York City | 17 | 0 | 17 | 21 | 15 |
| Albany, N. Y. | 17 | 0 | 17 | 19 | 15 |
| Buffalo, N. Y. | 15 | 0 | 15 | 18 | 14 |
| †Rochester, N. Y. | 13 | 0 | 13 | 16 | 13 |
| Syracuse, N. Y. | 17 | 0 | 17 | 19 | 15 |
| Boston, Mass. | 17 | 0 | 17 | 18 | 15 |
| Augusta, Me. | 17 | 4 | 21 | 23 | 15 |
| Manchester, N. H. | 17 | 3 | 20 | 22 | 15 |
| Burlington, Vt. | 17 | 3 | 20 | 22 | 15 |

*In steel barrels.

†It is reported that S. O. New York is selling a second grade of gasoline at Rochester, 4c below the above posted prices which apply on its Socony grade.

### ATLANTIC REFINING

| | | | | | |
|---|---|---|---|---|---|
| Pittsburgh, Pa. | 16 | * | 16 | *22 | 14 |
| Philadelphia, Pa. | 15 | * | 15 | *21 | 14 |
| Allentown, Pa. | 16 | * | 16 | *22 | 14 |
| Erie, Pa. | 12 | * | 12 | *18 | 14 |
| Scranton, Pa. | 16 | * | 16 | *22 | 14 |
| Altoona, Pa. | 16 | * | 16 | *22 | 14 |
| Dover, Del. | 16 | 3 | 19 | 22 | 14 |
| Wilmington, Del. | 16 | 3 | 19 | 22 | 14 |
| Providence, R. I. | 17 | 2 | 19 | 19 | 15 |
| Boston, Mass. | 17 | 0 | 17 | 17 | 15 |
| Springfield, Mass. | 17 | 0 | 17 | 17 | 15 |
| Worcester, Mass. | 17 | 0 | 17 | 17 | 15 |
| Hartford, Conn. | 19 | 2 | 21 | 22 | 15 |
| New Haven, Conn. | 19 | 2 | 21 | 21 | 15 |

*3-cent state tax is collected by retail dealer and paid by him directly to state.

### S. O. KENTUCKY

| | | | | | |
|---|---|---|---|---|---|
| Lexington, Ky. | 13 | 5 | 18 | 21 | 15.5 |
| Louisville, Ky. | 14 | 5 | 19 | 22 | 15 |
| Covington, Ky. | 14 | 5 | 19 | 22 | 15.5 |
| Clarksdale, Miss. | 13 | 4 | 17 | 20 | 12.5 |
| Gulfport, Miss. | ††14.5 | 4 | ††18.5 | 21.5 | 14 |
| Jackson, Miss. | 13 | 4 | 17 | 20 | 13.5 |
| Natchez, Miss. | 12.5 | 4 | 16.5 | 19.5 | 14 |
| Vicksburg, Miss. | 12.5 | 4 | 16.5 | 19.5 | 14 |
| Birmingham, Ala.‡ | 14 | 4 | 18 | 21 | 15.5 |
| Mobile, Ala.‡ | 13 | 4 | 17 | 20 | 15 |
| Montgomery, Ala.*‡ | 15 | 4 | 19 | 22 | 16.5 |
| Atlanta, Ga. | 12 | 4 | 16 | 18 | †15.5 |
| Augusta, Ga. | 15 | 4 | 19 | 22 | †16.5 |
| Macon, Ga. | 15 | 4 | 19 | 22 | †16.5 |
| Savannah, Ga. | 13 | 4 | 17 | 19 | 14.5 |
| Jacksonville, Fla.° | 13 | 5 | 18 | 21 | 14 |
| Miami, Fla.° | 15 | 5 | 20 | 23 | 15.5 |
| Tampa, Fla.° | 13 | 5 | 18 | 21 | 14 |
| Pensacola, Fla.° | **14 | 5 | **19 | 22 | 14 |

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included.

‡Alabama gasoline prices include 1/40 of 1c inspection fee, effective Oct. 1, 1927.

†Georgia kerosene prices include 1c state tax.

°Florida gasoline prices include ½c inspection fee.

**Both tank wagon prices include 1c city tax at Pensacola, which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

### S. O. INDIANA

| | Gasoline T.W. | Tax | Total T.W. | S.S. | Oil T.W. |
|---|---|---|---|---|---|
| Chicago, Ill. | 14 | 2 | 16 | 18 | 12 |
| Decatur, Ill. | 8.5 | 2 | 10.5 | 12.5 | 12.1 |
| E. St. Louis, Ill. | 13.1 | 2 | 15.1 | 17.35 | 11.2 |
| Joliet, Ill. | 14.4 | 2 | 16.4 | 18.4 | 12.3 |
| Peoria, Ill. | 10 | 2 | 12 | 12 | 12.1 |
| Quincy, Ill. | 14.2 | 2 | 16.2 | 18.2 | 11.9 |
| Indianapolis, Ind. | 11.2 | 3 | 14.2 | 15.2 | 13.2 |
| Evansville, Ind. | 14 | 3 | 17 | 19 | 13 |
| South Bend, Ind. | 12 | 3 | 15 | 15 | 13.4 |
| Detroit, Mich. | 12.8 | 3 | 15.8 | 17.8 | 13.7 |
| Grand Rapids, Mich. | 11 | 3 | 14 | 16 | 13.6 |
| Saginaw, Mich. | 14.9 | 3 | 17.9 | 19.9 | 13.8 |
| Green Bay, Wis. | 14.6 | 2 | 16.6 | 18.6 | 12.4 |
| Madison, Wis. | 14.3 | 2 | 16.3 | 18.3 | 12.1 |
| Milwaukee, Wis. | 14.1 | 2 | 16.1 | 18.1 | 11.9 |
| La Crosse, Wis. | 15.2 | 2 | 17.2 | 19.2 | 13 |
| Minneapolis, Minn. | 12 | 2 | 14 | 14 | 12.9 |
| Duluth, Minn. | 13.5 | 2 | 15.5 | 17.5 | 12.9 |
| Mankato, Minn. | 15.1 | 2 | 17.1 | 19.1 | 12.7 |
| Des Moines, Ia. | 14 | 3 | 17 | 19 | 12.3 |
| Davenport, Ia. | 12.5 | 3 | 15.5 | 17.5 | 12.3 |
| Sioux City, Ia. | 14.1 | 3 | 17.1 | 19.1 | 11.9 |
| Mason City, Ia. | 14.5 | 3 | 17.5 | 19.5 | 12.3 |
| St. Louis, Mo. | *13.6 | 2 | 15.6 | 17.9 | 11.3 |
| Kansas City, Mo. | †12.9 | 2 | 14.9 | 16.9 | 10.6 |
| St. Joseph, Mo. | †12.5 | 2 | 14.5 | 16.5 | 11.2 |
| Fargo, N. D. | 13 | 2 | 15 | 17 | 14.9 |
| Grand Forks, N. D. | 17.2 | 2 | 19.2 | 21.2 | 15.2 |
| Minot, N. D. | 16.9 | 2 | 18.9 | 20.9 | 14.9 |
| Pierre, S. D. | 15.5 | 4 | 19.5 | 21.5 | 13.9 |
| Huron, S. D. | 12.5 | 4 | 16.5 | 18.5 | 13.9 |
| Wichita, Kans. | 12.8 | 2 | 14.8 | 16.8 | 10.8 |
| Bartlesville, Okla. | 12.8 | 3 | 15.8 | 17.8 | 10.8 |

S. O. Indiana Q. D. A. schedule on tank wagon deliveries of gasoline, effective March 3 thru territory, except Wisconsin effective March 4: 50 gals. and over on delivery, 1c discount, except in city of Chicago where 1c discount applies on 100 gals. and over; 6,000 gals. and over per month, 1½c; 10,000 gals. and over per month, 2c; 15,000 gals. and over per month 3c, except latter discount does not apply in Chicago.

Service station discounts: 200 gals. or more per month, and 2400 gals. or more per year, 2c per gal.

March 1, 1c discount on kerosene in 50 gal. dumps thru territory.

*Includes city tax of ½c.

†Includes city tax of 1c.

### S. O. NEBRASKA

| | | | | | |
|---|---|---|---|---|---|
| Omaha, Neb. | 14.25 | 2 | 16.25 | 16.25 | 12.25 |
| McCook | 12.75 | 2 | 14.75 | 16.75 | 11.50 |
| Norfolk | 14.75 | 2 | 16.75 | 18.75 | 12.75 |
| North Platte | 15.75 | 2 | 17.75 | 19.75 | 13.50 |
| Scottsbluff | 15.25 | 2 | 17.25 | 19.25 | 13.00 |

### CONTINENTAL OIL

| | | | | | |
|---|---|---|---|---|---|
| Denver, Colo. | 13 | 3 | 16 | 16 | 12.5 |
| Pueblo, Colo. | 12 | 3 | 15 | 15 | 14.5 |
| Grand Junction, Colo. | 17.5 | 3 | 20.5 | 22.5 | 18 |
| Casper, Wyo. | 14 | 3 | 17 | 19 | 13 |
| Cheyenne, Wyo. | 15 | 3 | 18 | 20 | 14.5 |
| Butte, Mont. | 19 | 3 | 22 | 22 | 19 |
| Helena, Mont. | 19.5 | 3 | 22.5 | 24.5 | 19 |
| Salt Lake City, Utah | 17.5 | 3½ | 21 | 23 | 17 |
| Boise, Ida. | 19.5 | 4 | 23.5 | 25.5 | 19 |
| Twin Falls, Ida. | 19.5 | 4 | 23.5 | 25.5 | 19 |
| Albuquerque, N. M. | 16 | 5 | 21 | 24 | 17 |

### S. O. CALIFORNIA*

| | | | | | |
|---|---|---|---|---|---|
| Phoenix, Ariz. | 19 | 4 | 23 | 27 | 21.5 |
| Los Angeles, Cal. | 13.5 | 3 | 16.5 | 20.5 | 15.5 |
| Fresno, Cal. | 14 | 3 | 17 | 21 | 16.5 |
| San Francisco, Cal. | 14 | 3 | 17 | 21 | 15.5 |
| Reno, Nev. | 18 | 4 | 22 | 26 | 19 |
| Portland, Ore. | 14.5 | 3 | 17.5 | 21.5 | 16.5 |
| Seattle, Wash. | 14.5 | 2 | 16.5 | 20.5 | 16.5 |
| Spokane, Wash. | 18.5 | 2 | 20.5 | 24.5 | 20.5 |
| Tacoma, Wash. | 14.5 | 2 | 16.5 | 20.5 | 16.5 |

*On Oct. 1, t.w. price at all points for spot sales, was advanced 1c. Very large portion of deliveries are under contract carrying above prices. New customers signing contracts and selling only one brand of gasoline, are given prices published in above table.

### S. O. LOUISIANA

| | | | | | |
|---|---|---|---|---|---|
| Little Rock, Ark. | 11 | 5 | 16 | 16 | 12 |
| Alexandria, La. | 13 | 2 | 15 | 18 | †14 |
| Baton Rouge, La. | 12 | 7 | 14 | 17 | †12.5 |
| Lake Charles, La. | 13.5 | 2 | 15.5 | 18.5 | †14 |
| New Orleans, La. | 13.5 | 2 | *15.5 | *15.5 | 14 |
| Shreveport, La. | 13.5 | 2 | 15.5 | 18.5 | †13 |
| Lafayette, La. | 13 | 2 | 15 | 18 | †13.5 |
| Bristol, Tenn. | 16 | 3 | 19 | 22 | 14 |
| Chattanooga, Tenn. | 16.5 | 3 | 19.5 | 22.5 | 15 |
| Knoxville, Tenn. | 16.5 | 3 | 19.5 | 22.5 | 15 |
| Nashville, Tenn. | 15 | 3 | 18 | 21 | 15 |
| Memphis, Tenn. | 13.5 | 3 | 16.5 | 16.5 | 14 |

*New Orleans gasoline prices include 1c parish tax in addition to 2c state tax, and kerosene prices include 1c state tax and 1c parish tax.

†Kerosene price in Louisiana includes 1c state tax.

### S. O. OHIO

| | Gasoline T.W. | Tax | Total T.W. | S.S. | Oil T.W. |
|---|---|---|---|---|---|
| All Ohio points | 14 | 3 | 17 | 19 | 14 |

### MAGNOLIA PETROLEUM

| | | | | | |
|---|---|---|---|---|---|
| Muskogee, Okla. | 12 | 3 | 15 | 18 | 9 |
| Oklahoma City | 10 | 3 | 13 | 14 | 9 |
| Tulsa, Okla. | 11 | 3 | 14 | 15 | 9 |
| Fort Smith, Ark.* | 13 | *3 | 16 | 19 | 12 |
| Little Rock, Ark. | 11 | 5 | 16 | 16 | 12 |
| Texarkana, Ark. * | 12 | *3 | 15 | 18 | 12 |
| Dallas, Tex. | 11 | 3 | 14 | 17 | 11 |
| Fort Worth, Tex. | 11 | 3 | 14 | 16 | 10 |
| Houston, Tex. | 10 | 3 | 13 | 15 | 15 |
| San Antonio, Tex. | 10 | 3 | 13 | 15 | 10 |
| El Paso, Tex. | 11 | 3 | 14 | 15 | 16 |

*Within City of Texarkana and Fort Smith, the state tax on gasoline is 3c per gal. conforming with the Texas state tax. In these two districts outside of the city the 5c Arkansas tax applies.

### V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

| | Oleum Spirits | V.M. & P. Naphtha | Cleaner Naphtha |
|---|---|---|---|
| Chicago | 16 | 18 | 18 |
| Detroit | 17.7 | 19.7 | 19.7 |
| Kansas City | 16.2 | †18.2 | †18.2 |
| Milwaukee | 16.7 | *20.7 | *20.7 |
| Minneapolis | *20 | *22 | *22 |
| St. Louis | 15.9 | 17.9 | 17.9 |
| New York | ... | 19 | .... |

*Includes 2c state tax.

†Includes 1c city tax.

## CANADA

**(Per Imperial Gallon, which is 1.2 American Gallons)**

**ONTARIO**

| | Gasoline T.W. | Tax | Total T.W. | S.S. | Oil T.W. |
|---|---|---|---|---|---|
| Toronto | 19.5 | 3 | 22.5 | 26 | 21 |
| Ottawa | 19.5 | 3 | 22.5 | 26 | 21 |
| Cochrane | 24.5 | 3 | 27.5 | 36 | 26 |
| Ft. William | 24.5 | 3 | 27.5 | 31 | 23.5 |

**MANITOBA**

| | | | | | |
|---|---|---|---|---|---|
| Winnipeg | 24.5 | 3 | 27.5 | 31 | 23.5 |

**SASKATCHEWAN**

| | | | | | |
|---|---|---|---|---|---|
| Regina | 27.5 | 0 | 27.5 | 32 | 26.5 |

**ALBERTA**

| | | | | | |
|---|---|---|---|---|---|
| Edmonton | 26.5 | 3 | 29.5 | 33 | 25.5 |
| Calgary | 22.5 | 3 | 25.5 | 29 | 23.5 |

**BRITISH COLUMBIA**

| | | | | | |
|---|---|---|---|---|---|
| Vancouver | 21 | 3 | 24 | 28 | 22 |

**QUEBEC**

| | | | | | |
|---|---|---|---|---|---|
| Montreal | 20.5 | 3 | 23.5 | 27 | 21 |
| Quebec City | 22.5 | 3 | 25.5 | 31 | 23 |
| Three Rivers | 22.5 | 3 | 25.5 | 30 | 23 |

**NEW BRUNSWICK**

| | | | | | |
|---|---|---|---|---|---|
| St. John | 24.5 | 3 | 27.5 | 32 | 24 |
| Moncton | 24.5 | 3 | 27.5 | 32 | 24 |

**NOVA SCOTIA**

| | | | | | |
|---|---|---|---|---|---|
| Halifax | 24.5 | 3 | 27.5 | 32 | 24 |
| Sydney | 24.5 | 3 | 27.5 | 32 | 24 |

**PRINCE EDWARD ISLAND**

| | | | | | |
|---|---|---|---|---|---|
| Charlottetown | 24.5 | 3 | 27.5 | 31 | 24 |

Note: In districts surrounding these points 1c additional is added to city price.

# Export Demand Increases at Gulf; Kerosene Price Advanced

Staff Special
NEW YORK, Nov. 5

DEMAND from foreign buyers increased in the Gulf market this week and several cargo sales resulted. Prices of light oils varied but little from prices a week ago. Kerosene toward the end of the week was advanced a 0.25 cent by one or two leading refiners, but prices of bunker oil fell 5 cents a barrel.

The French subsidiary of a leading United States refiner purchased a mixed cargo late this week for last half of November lifting at the Gulf. Scarcity of kerosene, it was asserted, brought higher prices for this commodity than have been quoted recently. The cargo, consisting of approximately 50,000 barrels of oil, was divided and priced as follows: 3,000 barrels of U. S. Motor gasoline, 7 cents; 6,000 barrels of 61-63, 390 end point gasoline, 8 cents; 20,000 barrels of 64-66, 375 end point gasoline, 8.25 cents; 12,000 barrels of water white kerosene, 7.25 cents, and 12,000 barrels of prime white, 6.25 cents. The same buyer was reported to be in the market today for additional mixed cargo.

Another French buyer who sought three cargoes of U. S. Motor and 64-66, 375 end point gasoline, one each for November, December, and January, so far has purchased only two cargoes. Each inquiry called for approximately 40.000 barrels of the former and 10.000 barrels of the latter grade. Prices for the two cargoes purchased were reported to be 7 cents for U. S. Motor and 8.25 cents for the 64-66, but terms of the agreements were such that the actual selling prices figured slightly lower.

There was a good deal of optimistic sentiment expressed among exporters in New York toward the latter part of this week, and this was founded largely on reports of a probable advance in prices of light grades of Mid-Continent crude within the next week or 10 days. Some men in the trade pointed to the fact that no other field compares with Seminole in production of high gasoline content crude, and with production in this field steadily declining, the major purchasers of this crude are not going to let the opportunity of bringing prices for this crude up to reasonable levels go by.

A reported scarcity of kerosene in some quarters had a tendency to stiffen prices. Two major refiner-exporters are again in the market as buyers, and one that seeks prime white, offers 6 cents at the Gulf.

Gas oil prices were down approximately 0.125 to 0.25 cent a gallon. The 26-28 translucent gas oil was available at 4.125 to 4.25 cents. Higher gravity goods could be bought at the latter price also. No cargo sales were reported.

Two cargoes of Grade C bunker oil were offered at the Gulf this week at $1.10 a barrel with no takers. This was a 5-cent reduction from the price a week ago, and also 5 cents under the price at which the United States Shipping Board contracted for its 1928 requirements at New Orleans. An inquiry for 4,250,000 barrels of Grade C for shipment over the next 60 days did not develop business. Bunker prices also were down 5 cents a barrel at New Orleans to $1.20 but were steady further west on the Gulf at $1.30.

The New Orleans wax market was quiet with white crude scale generally quoted at 2.75c to 2.875 cents, a reduction of 0.125 cent under prices a week ago.

# Kerosene and Gas Oil Prices Rise In New York Domestic Market

Staff Special
NEW YORK, Nov. 5

EXCEPT for slightly higher kerosene and gas oil prices, Atlantic seaboards markets this week were essentially the same as a week ago. Gasoline demand from the jobbing trade lagged somewhat, but prices held fairly steady. The declining fuel oil market at the Gulf has not affected the bunker oil market at New York, but the feeling was general that a continuance of low prices in the south would eventually lower bunker markets on the east coast.

At New York, the gasoline market opened Monday with most refiners asking 8 cents for U. S. Motor in tank cars. Spot movement was comparatively slow, but in view of favorable weather contract commitments were taken out regularly. As the week advanced, weather became bad and even contract movement slackened considerably. However, prices withstood the inactivity that resulted and as the week closed, U. S. Motor stood at the same level at which business opened Monday.

One leading Philadelphia refiner, however, reduced his price of U. S. Motor gasoline in tank cars for long haul to 7.75 cents. For short haul, his price remained at 8 cents, and short haul goods comprised the bulk of his business, he said. Acting as more or less of an antidote for the small volume of 7.75 cent goods sold, however, another leading refiner in this section continued to quote 8.25 cents for U. S. Motor and reported fair movement at this figure.

Gasoline movement was reported slow in New England and one refiner, who was quoting 8 cents, said he wouldn't be surprised to see the market slip below 7.75 cents within a month.

There has been so much talk about 7.75 cent gasoline at New York harbor that several refiners were considering advancing their prices from 8 to 8.25 cents to see if the advance would eliminate the "talk."

Inquiries for kerosene were more numerous and the supply of water white goods was reported to be comparatively limited. Several Bayonne refiners held this commodity at 7.50 cents while one or two continued to take business at 7 cents. The bulk of movement was between these two figures. Philadelphia refiners have advanced water white kerosene prices to a minimum of 7.25 cents.

Although the heavy contracting season for gas oil is not in full swing yet, prices have advanced slightly. Some shading of 4.75 cents was reported for bargeload lots of gas oil, but, generally, 4.75 cents was bottom for tank car business. One buyer reported he had been unable to better 5 cents for gas oil with low sulfur content.

Bunker oil movement was fairly steady. The price was $1.45 a barrel, New York. Since the last price reduction by the Standard Oil Co. of New Jersey, prices at the Gulf have fallen fully 10 cents a barrel.

## Export Lube Prices Fall; Wax is Steady

NEW YORK, Nov. 5.—Slight recessions were noted this week in prices of lubricating oils in the New York market. Wax was little changed.

Dark filtered bright stock was freely offered at 38 to 39 cents a gallon and indications from one or two scurces were that small lots of distress goods were available at still lower prices. A large inquiry for western bright stock was in the market.

Steam refined, 600 fire test, was offered at 17 to 17.50 cents a gallon against 17.50 to 18.50 cents last week, in spite of higher prices in the field.

Considerable talk was heard about neutral oil contracts for next year. Several refiners have expressed willingness to commit themselves to flat

# Complete Seaboard Market

***(Export markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the years 1924-1925-1926)***

## Eastern Domestic Market

**(Prices for tank car lots, f.o.b. refinery or seaboard terminal, represent majority of quotations and sales.)**

| | Nov. 7 | Oct. 31 | Oct. 24 |
|---|---|---|---|
| U.S. Motor gasoline, New York harbor | 8.00 | 8.00 | 8.00 – 8.25 |
| U.S. Motor gasoline, Philadelphia | 8.00 | 8.00 | 8.00 – 8.25 |
| U.S. Motor gasoline, *Boston | 8.00 – 8.25 | 8.00 – 8.25 | 8.00 – 8.25 |
| U.S. Motor gasoline, *Providence | 8.00 – 8.25 | 8.00 – 8.25 | 8.00 – 8.25 |
| U.S. Motor gasoline, Baltimore | 8.00 | 8.00 | 8.00 – 8.25 |
| U.S. Motor gasoline, Norfolk | 8.00 | 8.00 | 8.00 – 8.25 |
| U.S. Motor gasoline, Charleston | 7.75 | 7.75 | 7.75 – 8.00 |
| U.S. Motor gasoline, Savannah | 7.50 – 7.75 | 7.50 – 7.75 | 7.75 |
| U.S. Motor gasoline, Jacksonville | 7.50 | 7.50 | 7.50 – 7.75 |
| California U.S. Motor gasoline, Baltimore | 8.00 – 8.25 | 8.00 – 8.25 | 8.00 – 8.50 |
| California U.S. Motor gasoline, Philadelphia | 8.00 | 8.00 | 8.00 – 8.25 |
| Water white kerosene, New York harbor | 7.00 – 7.50 | 7.00 – 7.50 | 6.75 – 7.00 |
| Water white kerosene, Philadelphia | 7.25 – 7.50 | 7.00 – 7.50 | 6.75 – 7.00 |
| Water white kerosene, Baltimore | 7.00 – 7.50 | 7.00 – 7.50 | .... ... |
| Water white kerosene, *Boston | 7.00 | 7.00 – 7.50 | 7.00 |
| 28-34 gas oil, New York harbor | 4.75 – 5.00 | 4.75 | 4.75 |
| 28-34 gas oil, *Boston | 4.75 | 4.875– 5.00 | 5.00 |
| 38-42 furnace oil, New York harbor | 6.00 | 6.00 | 6.00 |
| 36-40 furnace oil, *Boston | 6.00 – 6.25 | 6.00 – 6.25 | 6.00 – 6.25 |
| Grade C bunker oil, New York harbor | $1.45 | $1.45 | $1.55 |
| Grade C bunker oil, *Boston | $1.50 –$1.55 | $1.50 –$1.55 | $1.60 |
| Diesel oil, New York harbor | $2.10 | $2.10 | $2.10 |
| **MEDICINAL OILS** | | | |
| Russian 885-890 s.g., 325-330 vis. | $0.80 –$0.90 | $0.75 –$0.85 | $0.75 –$0.85 |
| Russian 870-875 s.g., 150-155 vis. | $0.67 –$0.77 | $0.67 –$0.77 | $0.67 –$0.77 |
| Russian 860-865 s.g., 80-85 vis. | $0.65 –$0.75 | $0.65 –$0.75 | $0.65 –$0.75 |

***F.O.B. New England refineries and seaboard terminals.**

## New York Export Market

**(Gasoline and kerosene in cases in bulk. Lubricating oils are all Penna. products, prices per gal. in bbls.)**

| | Nov. 7 | Oct. 31 | Oct. 24 |
|---|---|---|---|
| U. S. Motor gasoline | 23.90 | 23.90 | 24.40 |
| 43-45, 150 w.w. kerosene | 18.15 | 18.15 | 18.15 |
| 42-44, 110 s.w. kerosene | 17.15 | 17.15 | 17.15 |
| **CYLINDER OILS** | | | |
| Bright stock | 38.00 –39.00 | 38.00 –39.00 | 38.00 –39.00 |
| 600 D filtered | 31.00 | 31.00 | 31.00 |
| 600 Warren E filtered | 25.00 | 25.00 | 25.00 |
| 600 s.r. unfiltered | 17.00 –17.50 | 17.50 –18.00 | 17.00 –18.00 |
| 650 s.r. unfiltered | 18.50 –19.00 | 18.50 –19.50 | 18.50 –19.50 |
| 600 flash s.r. | 20.00 | 20.00 | 20.00 –21.00 |
| 630 flash s.r. | 31.00 –33.00 | 31.00 –33.00 | 31.00 –33.00 |
| **RED ENGINE OILS (Vis. 100°)** | | | |
| 300 vis. No. 6½ color | 20.00 | 20.00 | 20.00 |
| 250 vis. No. 6 color | 19.00 | 19.00 | 19.00 |
| 200 vis. No. 6 color | 18.50 | 18.50 | 18.50 |
| **PALE ENGINE OILS (Vis. 100°)** | | | |
| 230 vis. No. 3¾ color | 24.00 | 24.00 | 24.00 |
| 180 vis. No. 3¼ color | 20.00 | 20.00 | 20.00 |
| 100 vis. No. 2¼ color | 15.75 | 15.75 | 15.75 |
| **MOTOR OILS (Vis. 100 )** | | | |
| 600 vis. No. 7 color | 35.00 | 35.00 | 35.00 |
| 500 vis. No. 6½ color | 33.00 | 33.00 | 33.00 |
| 400 vis. No. 7¼ color | 31.00 | 31.00 | 31.00 |
| 300 vis. No. 6 color | 30.00 | 30.00 | 30.00 |
| 200 vis. No. 3¼ color | 24.00 | 24.00 | 24.00 |
| **MEDICINAL OILS** | | | |
| 875-885 s.g. | $0.80 | $0.80 | $0.80 |
| 865-870 s.g. | $0.70 | $0.70 | $0.70 |

**WAXES (In cents per pound, f.a.s. carload lots)**

**WHITE CRUDE SCALE (In barrels)**

| | Nov. 7 | Oct. 31 | Oct. 24 |
|---|---|---|---|
| 122-124 A.m.p. | 3.00 | 3.00 | 3.00 – 3.125 |
| 124-126 A.m.p. | 3.00 | 3.00 | 3.00 – 3.125 |
| **FULLY REFINED (In burlap bags)** | | | |
| 123-125 A.m.p. | 4.00 | 4.00 – 4.125 | 4.00 – 4.125 |
| 125-127 A.m.p. | 4.00 | 4.00 – 4.125 | 4.00 – 4.125 |
| 128-130 A.m.p. | 4.00 – 4.25 | 4.125– 4.25 | 4.125– 4.25 |
| 130-132 A.m.p. | 4.50 | 4.50 | 4.50 |
| 133-135 A.m.p. | *5.50 | *5.50 | *5.50 |
| 135-137 A.m.p. | *5.75 – 6.00 | *5.75 – 6.00 | *5.75– 6.00 |
| **YELLOW CRUDE SCALE** | | | |
| 124-126 A.m.p. | 2.75 | 2.75 | 2.75 – 2.875 |

***Prices nominal.**

## Gulf Export Market

**(F.O.B. Gulf oil terminals in Texas and Louisiana, shipments of 20,000 bbls. and over, except where otherwise noted.)**

| GASOLINE | Nov. 7 | Oct. 31 | Oct. 24 |
|---|---|---|---|
| U. S. Motor | 7.00 | 7.00 | 7.00 – 7.25 |
| 61-63, 390 e.p. | 8.00 | 8.00 | 7.875– 8.00 |
| 64-66, 375 e.p. | 8.25 | 8.25 | 8.25 |
| U. S. Motor, cases (cargoes) | $1.60 | $1.60 | $1.60 –$1.65 |
| 64-66, cases (cargoes) | $1.75 | $1.75 | $1.75 –$1.80 |
| **KEROSENE** | | | |
| 44 water white | 7.00 – 7.25 | 7.00 | 7.00 – 7.25 |
| 41-43 prime white | 6.00 – 6.25 | 6.00 | 6.00 – 6.25 |
| Water white, cases (cargoes) | $1.60 | $1.60 | $1.60 –$1.65 |
| Prime white, cases (cargoes) | $1.50 | $1.50 | $1.50 –$1.55 |
| **DOMESTIC GAS & BUNKER OILS** | | | |
| *26-28 gas oil | 4.125– 4.25 | 4.25 | 4.25 – 4.375 |
| *30-32 gas oil | 4.25 | 4.50 | 4.50 |
| Grade C bunker oil | $1.20 –$1.30 | $1.25 –$1.30 | $1.30 –$1.35 |
| Grade C bunker oil, cargoes | $1.10 –$1.15 | $1.15 –$1.20 | $1.18 –$1.20 |

***Translucent thru neck of 4 oz. bottle.**

**MEXICAN CRUDE AND BUNKER OILS (F.O.B. Steamer, Tampico)**

| | | | |
|---|---|---|---|
| Heavy Panuco crude taxes to be paid | $1.05 –$1.10 | $1.10 –$1.12 | $1.10 |
| Grade C bunker oil, for bunkering purposes, taxes paid | $1.35 | $1.35 | $1.35 |

**SOUTH TEXAS LUBRICATING OILS (Viscosity at 100° F.; cold test 0) (Tanker, f.o.b. Houston)**

| | | | |
|---|---|---|---|
| 100 vis. No. 2 unfiltered pale | 6.00 – 6.50 | 6.00 – 6.50 | 6.00 – 6.50 |
| 200 vis. No. 3 unfiltered pale | 8.00 – 9.00 | 8.00 – 9.00 | 8.00 – 9.00 |
| 300 vis. No. 3 unfiltered pale | 9.00 –10.00 | 9.00 –10.00 | 9.00 –10.00 |
| 500 vis. No. 3½ unfiltered pale | 11.00 –11.50 | 11.00 –11.50 | 11.00 –11.50 |
| 200 vis. No. 5½ red oil | 7.00 – 7.50 | 7.00 – 7.50 | 7.00 – 7.50 |
| 300 vis. No. 5½ red oil | 8.00 – 8.50 | 8.00 – 8.50 | 8.00 – 8.50 |
| 500 vis. No. 6 red oil | 10.00 | 10.00 | 10.00 |

## Pacific Export Market

**(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)**

| | Nov. 7 | Oct. 31 | Oct. 24 |
|---|---|---|---|
| Gasoline, U. S. Motor, 53-55 Gravity | 6.00 – 6.50 | 6.00 – 6.50 | 6.00 – 6.50 |
| Gasoline, U. S. Motor, blends and special cuts | 7.00 – 8.00 | 7.00 – 8.00 | 7.00 – 8.00 |
| Gas Oil, 30-34, per barrel | $0.95 –$1.05 | $0.90 –$1.00 | $0.90 –$1.00 |
| Diesel Oil, 27 plus, per barrel | $0.85 –$1.00 | $0.80 –$1.00 | $0.80 –$1.00 |
| Bunker oil, 14-18, per barrel | $0.80 –$1.00 | $0.85 –$1.00 | $0.85 –$1.00 |
| Fuel oil, 14-18, per barrel | $0.75 –$1.00 | $0.80 –$1.00 | $0.80 –$1.00 |
| Kerosene, 38-40 w.w., 125-150 flash, per gal. | 4.50 – 5.00 | 4.50 – 5.00 | 4.50 – 5.00 |
| **Cased Goods** | | | |
| Gasoline, U. S. Motor | $1.70 –$1.80 | $1.70 –$1.80 | $1.70 –$1.80 |
| Kerosene, 38-40 w.w., 125-150 flash | $1.35 –$1.50 | $1.35 –$1.50 | $1.35 –$1.50 |

prices over 1928 and the prices mentioned are but 1 or 2 cents more than current prices.

Foreign demand for wax failed to improve but prices of both scale and fully refined grades were fairly steady. For the most part, white crude scale was held at 3 cents a pound.

# Crude Oil Prices, as Posted by Major

*(Crude prices for years 1924-1925-1926 in*

### EASTERN FIELDS

**(Posted by Joseph Seep Purchasing Agency)**

Penna. Grade Oil in New York Transit Lines (Alleghany, N. Y. District).....$2.65
Bradford District Oil in National Transit Lines (Bradford District)..... 2.65
Penna. Grade Oil in National Transit Lines (Other Pennsylvania)..... 2.55
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania)..... 2.55
Penna. Grade Oil in Eureka Pipe Lines (West Virginia)..... 2.50
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district)..... 2.25
Keister Grade in National Transit Lines (Butler Co.)..... 1.10
Cabell Grade in Eureka Pipe Lines (West Virginia)..... 1.40
Corning Grade in Buckeye Pipe Lines (Ohio)..... 1.45
Corning, O. heavy grade..... 1.35
*Somerset Oil in Cumberland Pipe Lines (Kentucky)..... 1.50
Ragland Grade in Cumberland Pipe Lines (Kentucky)..... .95

*Somerset oil run prior to Oct. 1922, takes price of 6 cents lower than above quotations.

**(Posted by Stoll Oil Refining Co.)**

Oil City, Ky., oil in Stoll lines.....$1.50

### CENTRAL STATES FIELDS

**Posted by Ohio Oil Co.**

Effective March 14, 1927

| | | | |
|---|---|---|---|
| Wooster..... | $1.57 | Plymouth..... | $1.33 |
| Lima..... | 1.71 | West. Kentucky | 1.33 |
| Waterloo..... | 1.35 | *Canadian Petro. | 2.11 |
| Indiana..... | 1.48 | *Oil Springs..... | 2.18 |
| Princeton..... | 1.60 | *Posted by Imperial | |
| Illinois..... | 1.60 | Oil Ltd. | |

### OKLAHOMA, KANSAS And NORTH TEXAS

**Prices of Prairie Oil & Gas Co.**

**(In Oklahoma, Kansas, North and East Central Texas)**

Effective March 12, 1927

| | | | |
|---|---|---|---|
| 28-28.9..... | $1.12 | 35-35.9..... | $1.26 |
| 29-29.9..... | 1.14 | 36-36.9..... | 1.28 |
| 30-30.9..... | 1.16 | 37-37.9..... | 1.30 |
| 31-31.9..... | 1.18 | 38-38.9..... | 1.32 |
| 32-32.9..... | 1.20 | 39-39.9..... | 1.34 |
| 33-33.9..... | 1.22 | 40-40.9..... | 1.36 |
| 34-34.9..... | 1.24 | 41-41.9..... | 1.38 |
| 42-42.9..... | $1.40 | 48-48.9..... | $1.52 |
| 43-43.9..... | 1.42 | 49-49.9..... | 1.54 |
| 44-44.9..... | 1.44 | 50-50.9..... | 1.56 |
| 45-45.9..... | 1.46 | 51-51.9..... | 1.58 |
| 46-46.9..... | 1.48 | 52 and above.... | 1.60 |
| 47-47.9..... | 1.50 | | |

Above schedule met on March 12, by Gulf, Mid-Continent Pet. Corp., and Empire; by Carter, Humble and the Texas Co. on March 14.

**Humble Oil & Refining Co. Prices**
**(Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)**

March 14, same schedule as Prairie in above fields.
Mirando, Tex.....$1.00

**Magnolia Petroleum Co.**
**(In Oklahoma, Kansas and North and East Central Texas)**

Effective Sept. 14, Magnolia posted same price schedule as Prairie in above fields except that Magnolia is paying $1.05 for all oil below 30 gravity.

Corsicana heavy.....$1.00

**Carter Oil Co.**
**(Oklahoma and Kansas)**

March 14, same schedule as Prairie.

### PANHANDLE, TEXAS

**Humble Oil & Refining Co.**

Effective Aug. 23

Hutchinson, Carson and Wheeler Counties..$0.75
Pampa, Gray County, Effective March 14:

| | | | |
|---|---|---|---|
| 28-28.9..... | $ .80 | 37-37.9..... | $ .98 |
| 29-29.9..... | .82 | 38-38.9..... | 1.00 |
| 30-30.9..... | .84 | 39-39.9..... | 1.02 |
| 31-31.9..... | .86 | 40-40.9..... | 1.04 |
| 32-32.9..... | .88 | 41-41.9..... | 1.06 |
| 33-33.9..... | .90 | 42-42.9..... | 1.08 |
| 34-34.9..... | .92 | 43-43.9..... | 1.10 |
| 35-35.9..... | .94 | 44 and above.... | 1.12 |
| 36-36.9..... | .96 | | |

### WEST TEXAS

**Humble Oil & Refining Co.**

Effective Aug. 23

Crane, Upton, Crockett and Pecos Counties...$0.60

### NORTH LOUISIANA — ARKANSAS FIELDS

**Prices of Standard Oil Co. of Louisiana Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton and De Soto**

Effective March 14, 1927

| | | | |
|---|---|---|---|
| Below 28..... | $1.10 | 40-40.9..... | $1.36 |
| 28-28.9..... | 1.12 | 41-41.9..... | 1.38 |
| 29-29.9..... | 1.14 | 42-42.9..... | 1.40 |
| 30-30.9..... | 1.16 | 43-43.9..... | 1.42 |
| 31-31.9..... | 1.18 | 44-44.9..... | 1.44 |
| 32-32.9..... | 1.20 | 45-45.9..... | 1.46 |
| 33-33.9..... | 1.22 | 46-46.9..... | 1.48 |
| 34-34.9..... | 1.24 | 47-47.9..... | 1.50 |
| 35-35.9..... | 1.26 | 48-48.9..... | 1.52 |
| 36-36.9..... | 1.28 | 49-49.9..... | 1.54 |
| 37-37.9..... | 1.30 | 50-50.9..... | 1.56 |
| 38-38.9..... | 1.32 | 51-51.9..... | 1.58 |
| 39-39.9..... | 1.34 | 52 and above.... | 1.60 |

*Smackover, below 24.....$0.90
*  do  24 and above..... 1.15
Bellevue..... 1.25
Cotton Valley..... 1.00
**Urania, La..... .90
†East El Dorado..... 1.00

**Posted by Louisiana Oil Refining Corp.

†Posted by Magnolia Petroleum Co.

*Smackover prices posted on Sept. 20 by S. O. La., Magnolia, Shreveport-El Dorado Pipe Line and Atlantic Oil Producing Co.; on Sept. 23 by The Texas Co. on Sept. 17, La. Oil Refg. Corp.

### STEPHENS, ARKANSAS

**Atlantic Oil Producing Co. and Louisiana Oil Refining Corp.**

| | | | |
|---|---|---|---|
| Below 28..... | $1.00 | 30-30.9..... | $1.06 |
| 28-28.9..... | 1.02 | 31-31.9..... | 1.08 |
| 29-29.9..... | 1.04 | 32 and above.... | 1.10 |

### GULF COASTAL

**Posted by Humble Oil & Refining Co.**

Effective March 14

| | | | |
|---|---|---|---|
| Grades A..... | $1.20 | 29-29.9..... | $1.25 |
| Grades B: | | 30-30.9..... | 1.27 |
| Below 25..... | 1.15 | 31-31.9..... | 1.29 |
| 25-25.9..... | 1.17 | 32-32.9..... | 1.31 |
| 26-26.9..... | 1.19 | 33-33.9..... | 1.33 |
| 27-27.9..... | 1.21 | 34-34.9..... | 1.35 |
| 28-28.9..... | 1.23 | 35 and above.... | 1.37 |

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling and Pierce Junction. All other fields are Grades A only.

# California Fuel Oil is Cheaper; Gasoline Prices are Steady

LOS ANGELES, Nov. 5.—Fuel oil asking price was lower this week. Cargoes were available in some quarters at 75 cents a barrel while some spot fuel was available in tank cars for out-of-state movement at 60 cents. The prices mentioned are the lows and do not mean that all of the companies are meeting them. Most of the larger companies are asking 85 cents for fuel to move to the east coast. But at 85 cents they are not able successfully to compete with fuel from the Gulf.

The range in prices of gasoline in tank cars for movement outside of California is not so wide as formerly. The low remains around 7 cents. Plenty of gasoline is available at 7 to 7½ cents. For export, the former 6-cent price holds although in one or two instances cargoes have gone out at slightly less than 6 cents. But these low priced cargoes are not representative of the actual market. This week there was one inquiry for a cargo of 58-60, 390 end point gasoline which was quoted at 7¼ to 7½ cents. It could not be ascertained today whether the order had been placed.

Refiners have boosted gas oil prices about 5 cents a barrel. Asking prices are now 95 cents to $1.05. There appears to be increased demand on the east coast, and a slightly increased demand on the west coast.

Spot price of natural gasoline continues 9½ cents but spot stuff is scarce and an order for 10 cars would almost clean up the market for two or three days.

Spot crude has also been scarce, but with the campaign on at Long Beach for the deeper sand, it is expected spot crude will be more plentiful within 60 days.

* * *

LOS ANGELES, Nov. 4.—A total of 1,297,894 barrels of petroleum products were exported from Los Angeles harbor during week ended Oct. 29, or a daily average of 185,418 barrels. This compares with 1,546,199 barrels during week ended Oct. 22, or a daily average of 220,885 barrels.

The total movement includes 92,401 barrels of crude, 800,075 barrels of fuel, 330,134 barrels of gasoline, and 75,284 barrels of Diesel. Atlantic domestic drew 86,320 barrels of crude, 82,110 barrels of fuel and 152,614 barrels of gasoline. Shipments to Atlantic foreign included 26,993 barrels of fuel and 1,946 barrels of aeroplane gasoline. The rest of the movement was to Pacific foreign.

### Returns From Branch Office Tour

TULSA, Nov. 5.—H. J. Scott, sales-manager for Transcontinental Oil Co. has returned from a tour of inspection of the company's division offices.

# Purchasers, in All Fields (in Effect November 7)

***OIL PRICE HANDBOOK published annually)***

### GULF COASTAL

**Prices of The Texas Co.**

(Effective March 14)

| | | | |
|---|---|---|---|
| Grades A | $1.20 | *Grades B | $1.15 |
| ‡Grades B (light crude): | | | |
| 35-35.9 | $1.37 | 38-38.9 | $1.43 |
| 36-36.9 | 1.39 | 39-39.9 | 1.45 |
| 37-37.9 | 1.41 | 40 and above | 1.47 |

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

‡The Texas Co.'s gravity and price schedule on oil below 35° is same as Humble's postings on Grades B.

### ROCKY MOUNTAIN FIELDS

**Prices of Ohio Oil Co. and Midwest Refining Co.**

(Salt Creek prices effective March 12)

| | | |
|---|---|---|
| ‡Salt Creek | 29-29.9 | $1.14 |
| " " | 30-30.9 | 1.16 |
| " " | 31-31.9 | 1.18 |
| " " | 32-32.9 | 1.20 |
| " " | 33-33.9 | 1.22 |
| " " | 34-34.9 | 1.24 |
| " " | 35-35.9 | 1.26 |
| " " | 36-36.9 | 1.28 |
| " " | 37 and above | 1.30 |
| Elk Basin | | 1.33 |
| Grass Creek light | | 1.33 |
| Big Muddy | | $1.25 |
| Lance Creek | | 1.33 |
| Rock Creek | | 1.25 |
| Mule Creek | | 1.30 |
| Rex Lake | | 1.10 |
| ‡Osage | | 1.33 |
| ‡Cat Creek, Mont. | | 1.33 |
| Sunburst, Mont. | | 1.35 |
| ‡Hogback, N. Mex. | | 1.38 |
| Artesia, N. Mex. | | 1.00 |

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

The Texas Co. buys Salt Creek and Big Muddy crude.

### CALIFORNIA

**Standard Oil Co. of California**

**Santa Maria and Ventura Posted by Union Oil Co.**

| Gravity | Signal Hill Seal Beach Huntington Beach | Inglewood Torrance | Whittier La Habra | Newhall, McKittrick, Kern River | Olinda-Brea Canon, Richfield | Athens-Rosecrans Dominguez | Montebello | Coyote Hills | Santa Fe Springs | Midway Sunset Buena Vista & Elk Hills | Lost Hills | Coalinga | Wheeler Ridge | Santa Maria | Ventura |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14-14.9 | $ .85 | $ .85 | $ .85 | $ .75 | $ .85 | .... | $ .85 | $ .85 | .... | $ .75 | $ .75 | $ .75 | $ .75 | $ .85 | $ .85 |
| 15-15.9 | .85 | .85 | .85 | .75 | .85 | .... | .85 | .85 | .... | .75 | .75 | .75 | .75 | .85 | .85 |
| 16-16.9 | .85 | .85 | .85 | .75 | .85 | .... | .85 | .85 | .... | .75 | .75 | .75 | .75 | .85 | .85 |
| 17-17.9 | .85 | .85 | .85 | .75 | .85 | .... | .85 | .85 | .... | .75 | .75 | .75 | .75 | .85 | .85 |
| 18-18.9 | .85 | .85 | .85 | .75 | .85 | .... | .85 | .85 | .... | .75 | .75 | .75 | .75 | .85 | .85 |
| 19-19.9 | .85 | .85 | .85 | .75 | .85 | .... | .85 | .85 | .... | .75 | .75 | .75 | .75 | .85 | .85 |
| 20-20.9 | .85 | .85 | .85 | .... | .85 | .... | .85 | .85 | .... | .77 | .77 | .76 | .76 | .85 | .85 |
| 21-21.9 | .86 | .86 | .85 | .... | .86 | .... | .85 | .86 | .... | .79 | .79 | .77 | .77 | .85 | .85 |
| 22-22.9 | .87 | .87 | .85 | .... | .87 | .... | .85 | .87 | .... | .81 | .81 | .78 | .78 | .85 | .85 |
| 23-23.9 | .88 | .88 | .... | .... | .88 | .... | .85 | .88 | .... | .83 | .83 | .79 | .79 | .85 | .85 |
| 24-24.9 | .89 | .89 | .... | .... | .89 | $ .89 | .85 | .89 | .85 | $ .85 | .85 | .80 | .80 | .85 | .85 |
| 25-25.9 | .90 | .90 | .... | .... | .90 | .90 | .86 | .90 | .85 | .87 | .87 | .81 | .81 | .86 | .86 |
| 26-26.9 | .92 | .92 | .... | .... | .92 | .92 | .87 | .91 | .85 | .89 | .89 | .83 | .82 | .87 | .87 |
| 27-27.9 | .94 | .94 | .... | .... | .94 | .94 | .88 | .92 | .85 | .91 | .91 | .85 | .83 | .88 | .88 |
| 28-28.9 | .96 | .96 | .... | .... | .96 | .96 | .89 | .93 | .86 | .93 | .93 | .87 | .... | .89 | .89 |
| 29-29.9 | .98 | .... | .... | .... | .98 | .98 | .90 | .94 | .87 | .96 | .96 | .89 | .... | .91 | .91 |
| 30-30.9 | 1.00 | .... | .... | .... | 1.00 | 1.00 | .91 | .95 | .88 | .99 | .99 | .91 | .... | .93 | .93 |
| 31-31.9 | 1.03 | .... | .... | .... | .... | 1.03 | .... | .... | .89 | 1.02 | 1.02 | .93 | .... | .... | .95 |
| 32-32.9 | 1.06 | .... | .... | .... | .... | 1.06 | .... | .... | .91 | 1.05 | 1.05 | .95 | .... | .... | .97 |
| 33-33.9 | .... | .... | .... | .... | .... | 1.09 | .... | .... | .93 | 1.08 | 1.08 | .97 | .... | .... | .99 |
| 34-34.9 | .... | .... | .... | .... | .... | 1.12 | .... | .... | .95 | .... | 1.11 | .99 | .... | .... | 1.01 |
| 35-35.9 | .... | .... | .... | .... | .... | 1.15 | .... | .... | .97 | .... | .... | 1.01 | .... | .... | 1.03 |
| 36-36.9 | .... | .... | .... | .... | .... | 1.18 | .... | .... | .99 | .... | .... | .... | .... | .... | 1.06 |
| 37-37.9 | .... | .... | .... | .... | .... | 1.21 | .... | .... | 1.01 | .... | .... | .... | .... | .... | 1.09 |
| 38-38.9 | .... | .... | .... | .... | .... | 1.24 | .... | .... | 1.03 | .... | .... | .... | .... | .... | 1.12 |
| 39-39.9 | .... | .... | .... | .... | .... | 1.27 | .... | .... | 1.06 | .... | .... | .... | .... | .... | 1.15 |
| 40-40.9 | .... | .... | .... | .... | .... | 1.30 | .... | .... | 1.09 | .... | .... | .... | .... | .... | .... |
| 41-41.9 | .... | .... | .... | .... | .... | 1.33 | .... | .... | 1.12 | .... | .... | .... | .... | .... | .... |
| 42-42.9 | .... | .... | .... | .... | .... | 1.36 | .... | .... | 1.15 | .... | .... | .... | .... | .... | .... |

*Union Oil Co. also purchases Long Beach Crude and is maintaining the same gravity and price schedule in that field as the Standard maintains in Signal Hill and Huntington Beach fields. The Union also buys and pays the same prices as the Standard in the Rosecrans-Dominguez fields, on gravities ranging from 14 degrees to and including 24.9 degrees and in Santa Fe Springs, on gravities ranging from 20 to and including 23.9 degrees.

## Ardmore, Okla. Concerns Merge Properties

Staff Special

TULSA, Nov. 6.—Several companies operating in the Ardmore district of southern Oklahoma have merged their assets under the name Wirt Franklin Oil Corp. The new company has been incorporated in Delaware, with authorized capitalization of $10,000,000 of which about half will be outstanding.

All the properties of Wirt Franklin, Cameron Refining Co., Knox Petroleum Co., Walter H. Gant and several others are included in the merger which, although announced only last week, has effective date of Aug. 1.

Assets of the new company included about 3,000 barrels daily production from 180 wells. The production is on leases totalling 2,500 acres and is in the Graham, Fox, Scholom Alechem, Knox, Duncan, Cement and Franklin extension (2s-3w) pools. Wildcat acreage totals about 30,000 acres. There is included the plant, bulk and filling stations, production and other assets of the Cameron Refining Co., with 4,000-barrel capacity skimming plant at Ardmore. Wirt Franklin was president of this company. This company had 25 bulk stations and 15 filling stations in southern Oklahoma.

The officers of the new company, besides Mr. Franklin, are: Walter H. Gant, first vice-president; Ossian Cameron, second vice-president; P. C. Dings, treasurer; Ed Galt, assistant treasurer and secretary; Frank M. Porter, assistant secretary.

Directors include the officers and the following: Knox Garvin, L. S. Dolman, N. B. Feagin, Roy M. Johnson, John M. Cameron, Jr., Frank M. Head, A. M. Edmiston and D. A. Corcoran.

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**Shaffer Oil & Refining Co.**—Deposit of $886,667 to be made for redemption of 6 per cent gold bonds Dec. 1 at the Continental & Commercial Trust & Savings bank, Chicago. Holders of bonds have been asked to make proposal of sale of bonds to the trustee at Chicago. The bonds are dated June 1, 1919.

## Doheny Company Planning West Coast Terminal

Staff Special

LOS ANGELES, Nov. 5.—Announcement was made here this week that the Petroleum Securities Co., a Doheny organization, had acquired 176 acres of land fronting on San Francisco Bay at Richmond, in addition to certain leases from the Parr Terminal Co., preparatory to the establishment of a terminal and distribution depot to serve that area.

This is the first venture of the Petroleum Securities Co. into the retail end of the business, as in southern California the retail business has been handled by the Pan American Petroleum Co., with Petroleum Securities doing the field development work.

Plans call for the expenditure of about $600,000 in the construction of storage tanks, loading racks and other equipment for the distributing plant. Later plans call for a tank farm, can factory, casing plant, wharves and warehouse facilities.

# OIL STOCKS AND FINANCES

National Petroleum News

## Larger Reserves Set Up This Year by Oil Companies

CLEVELAND, Nov. 5.—Detailed statement of Independent Oil & Gas Co. shows gross operating income in the first nine months of 1927 was approximately 50 per cent more than the gross in the first nine months of 1926. However, expenses and drilling costs were more than 70 per cent larger this year than last year, reducing the net operating income to a gain of only 30 per cent this year over last year's net operating income. Larger depletion reserves cut the net gain to about 16 per cent. Independent, is one of the few oil companies which has earned more profits this year than last. This is due to the company's large flush production in Seminole.

Louisiana Oil Refining Corp. earnings are lower this year than last by approximately 80 per cent. This corporation's statement shows a net profit of $245,984 for the first three quarters of 1927, after all charges, and $1,848,986 in the corresponding time of 1926 after all charges except federal income taxes. This year the corporation set up for income tax a reserve of 10 per cent of its net operating profit after all lawful reserves and interest. A similar practice last year would have brought the net down to $1,664,089.

Skelly Oil Co. is earning about one third this year of what it earned last year. Fall in gross operating income shows effect of low oil prices this year. Expenses were larger this year and larger reserves were set aside for depreciation and depletion. The company failed to earn its dividends for the three quarters by 5 cents a share.

Pan American Western Petroleum Co. reports net profits that are approximately one fifth of last year's net. This company is one of the few which have kept expenses this year lower than they did in 1926. However, lower gross sales and larger reserves caused smaller net profits.

Third quarter net profits of the four companies mentioned compare:

| | 1927 | 1926 |
|---|---|---|
| Independent O. & G. | $884,801 | †$842,481 |
| Louisiana Oil Ref. | *15,578 | 615,630 |
| Pan American Western | 273.942 | †448,930 |
| Skelly Oil | 769,938 | †1,914,681 |

*Loss. †Before federal income taxes.

### National Transit Issues Consolidated Report

OIL CITY, Pa., Nov. 7.—National Transit Co. has issued its first consolidated statement, taking in accounts of its two subsidiaries, the National Transit Pump & Machine Co. and the Maryland Pipe Line Co. The parent company in the first half of this year netted $387,633, equal to 76 cents a share on the $12.50 common stock. Consolidated income account for the half year follows:

| | |
|---|---|
| Gross | $2,170,701 |
| Operating expenses, etc. | 1,490,074 |
| Depreciation | 292,994 |
| Net profit | $ 387,633 |
| Dividends | 254,526 |
| Plant appropriations | 25,340 |
| Miscellaneous appropriations | 905 |
| Surplus | $ 106,862 |

Consolidated balance sheet of June 30 follows:

| ASSETS | |
|---|---|
| Plant, less depreciation | $ 3,720,111 |
| Investments | 8,943,531 |
| Cash | 1,015,178 |
| Accounts receivable | 895,113 |
| Inventories | 2,903,480 |
| Deferred assets | 93,906 |
| Total | $17,571,319 |
| **LIABILITIES** | |
| Capital stock | $ 6,363,350 |
| Accounts payable | 42,524 |
| Tax reserve | 289,317 |
| Insurance, annuity and casualty reserves | 1,563,672 |
| Miscellaneous reserves | 2,767,223 |
| Appropriated surplus | 6,035,318 |
| Unappropriated surplus | 509,915 |
| Total | $17,571,319 |

**Dividend Changes**—Vacuum Oil Co. has declared a special dividend of $1 a share in addition to the 50 cents regular and 50 cents extra a share; Pure Oil Co. has omitted its extra dividend of 12½ cents a share but has declared its 37½-cent regular dividend on the $25 stock.

* * *

**Canfield Oil Co.**—All dividends on the common stock for 1928 have already been declared.

### Indian Refining Plans To Fund Accruals

CLEVELAND, Nov. 7.—Indian Refining Co. proposes to recapitalize, fund its accrued preferred stock dividends and issue $2,500,000 bonds to provide working capital. A tentative plan will be voted on by Stockholders Nov. 8.

It is proposed to authorize not exceeding 35,000 shares of 7 per cent cumulative preferred stock, $100 par. This is to be issued in the discretion of directors but only in exchange for the present preferred stock on the basis of one share of present preferred for one share of new preferred; also a fractional share of new preferred equal to accrued dividends on old preferred.

There are now issued 22,964 shares of old preferred stock. On this there will have accumulated, as of Dec. 15, next, back dividends equal to $42 a share on this stock. To pay this off in new preferred stock, at par, would require 9,655 shares.

Other provisions are to authorize an issue of not more than $2,500,000 bonds secured by a mortgage on the property and to strike out section 11 of the by-laws, which provides that no mortgage can be placed on the property unless it is approved by vote of two-thirds of preferred.

## Comparative Condensed Earnings Statements for Nine Months of 1927 and 1926

| COMPANY | Year | Gross Operating Income | Expenses Costs etc. | Net Operating Income | Total Income | Deprec., Deplet., other Reserves | Net Profits | Net to Common a Share | Quarterly Dividend on Common |
|---|---|---|---|---|---|---|---|---|---|
| Independent Oil & Gas | 1927 | $9,626,824 | $5,236,429 | $4,390,395 | $4,390,395 | $2,546,460 | $1,843,935 | $3.68 | $0.25 |
| do | 1926 | 6,353,767 | 3,017,574 | 3,336,193 | 3,336,193 | 1,591,208 | 1,744,885 | 3.59 | .25 |
| Louisiana Oil Refining | 1927 | ..... | ..... | 1,542,542 | 1,773,269 | 1,527,285 | 245,984 | .04 | 0 |
| do | 1926 | ..... | ..... | 3,253,382 | 3,253,382 | 1,404,396 | †1,848,986 | .... | 0 |
| Skelly Oil Co. | 1927 | 17,598,765 | 11,226,573 | 6,372,192 | 6,372,192 | 4,780,664 | 1,591,528 | 1.45 | .50 |
| do | 1926 | 19,647,655 | 10,920,688 | 8,726,967 | 8,726,967 | 3,705,827 | †5,021,140 | .... | .50 |
| Pan American Western | 1927 | 23,623,082 | 18,340,685 | 5,272,397 | 5,272,397 | 4,834,641 | 437,756 | .87 | 0 |
| do | 1926 | 25,815,870 | 19,226,251 | 6,589,619 | 6,589,619 | 4,513,571 | 2,076,048 | 4.15 | .50 |

†Before federal income taxes.

# Transactions in Oil Shares on New York Stock Exchange

| 1926 High | 1926 Low | 1927 High | 1927 Low | Listed Capital | Par Value | Stocks | Div. Rate | Last Paid | Transactions Week Ended Nov. 5 Sales | First | High | Low | Last | Change |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 32⅞ | 24¼ | 37⅝ | 27⅝ | (sh) 916,675 | N.P. | Amerada Corp. | 50cQ | July 30, 27 | 17,100 | 29⅜ | 31½ | 29 | 29⅞ | + ⅞ |
| 74 | 39⅞ | 64⅞ | 35⅛ | (sh) 209,180 | N.P. | American Republics | ..... | ..... | 4,800 | 42 | 43⅜ | 40 | 42⅝ | + 2¼ |
| 59¼ | 44¾ | 50¼ | 40 | $ 56,000,000 | $25 | Associated Oil | 50cQ | Sept. 24, 27 | 400 | 40 | 41 | 37⅝ | 41 | + 6 |
| 128⅜ | 97 | 131⅜ | 107 | 50,000,000 | 100 | Atlantic Refining | $1Q | Sept. 15, 27 | 18,900 | 114⅝ | 119½ | 114¼ | 116¾ | + 2½ |
| 120 | 115½ | 118½ | 111½ | 20,000,000 | 100 | do pfd | $1.75Q | Aug. 1, 27 | ..... | ..... | ..... | ..... | ..... | ..... |
| 33½ | 23½ | 35½ | 20¾ | 25,000,000 | 25 | Barnsdall Corp. A | 62½cQ | July 15, 27 | 45,500 | 23½ | 25¼ | 22¾ | 23⅞ | + 1⅜ |
| 29½ | 22½ | 32½ | 20⅛ | 3,842,400 | 25 | do B | 62½cQ | July 15, 27 | 300 | 22⅞ | 25 | 22⅞ | 25 | + 3 |
| 68⅛ | 29¾ | 32¼ | 20 | 51,523,950 | 25 | California Petroleum | 25cQ | Sept. 1, 27 | 40,100 | 21⅝ | 25 | 21⅜ | 24 | + 2⅝ |
| 94¼ | 50 | 96¾ | 65 | 24,355,000 | 100 | General Asphalt | ..... | ..... | 80,900 | 84¾ | 85⅞ | 80⅝ | 83 | + ⅜ |
| 140⅔ | 94⅞ | 144⅛ | 107¼ | 6,874,200 | 100 | do pfd | $1.25Q | Sept. 1, 27 | 400 | 127¾ | 127¾ | 127½ | 127½ | — 3 |
| 72 | 50¼ | 175⅝ | 60½ | 25,000,000 | 100 | Houston Oil | ..... | ..... | 142,800 | 138¾ | 148 | 135¾ | 147 | +12¾ |
| 84 | 19⅝ | 32¾ | 17⅝ | (sh) 500,000 | N.P. | Independent Oil & Gas | 25cQ | Oct. 31, 27 | 59,900 | 23¾ | 26⅝ | 23½ | 26¼ | + 3⅝ |
| 13¾ | 7¼ | 12⅛ | 7½ | $ 3,280,340 | $10 | Indian Refining | ..... | Dec. 15, 20 | 2,500 | 8½ | 9¼ | 8½ | 9¼ | + 1¼ |
| 12⅓ | 8 | 12 | 7¼ | 4,550,110 | 10 | do ctfs | ..... | ..... | 500 | 8 | 9 | 8 | 9 | + 1⅜ |
| 104 | 90 | 112 | 99 | 2,296,400 | 100 | do pfd | ..... | Dec. 15, 21 | 100 | 100 | 100 | 100 | 100 | — 2 |
| 24½ | 19⅛ | 34⅝ | 20½ | (sh) 3,992,067 | N.P. | Lago Oil & Transport | 75cQ | Aug. 1, 27 | 16,000 | 31¾ | 34¼ | 31¾ | 33¼ | + 1¾ |
| 19¾ | 12 | 18⅜ | 10 | (sh) 1,131,290 | N.P. | Louisiana Oil Refining | ..... | ..... | 14,000 | 10 | 11⅛ | 10 | 11 | + 1 |
| 98 | 93 | 97 | 86 | $ 4,000,000 | $100 | do pfd | $1¾Q | Aug. 15, 27 | 30 | 86¾ | 86¾ | 86⅜ | 86⅜ | + 2 |
| 28⅞ | 16⅛ | 22⅝ | 12 | (sh) 330,000 | N.P. | Maracaibo Oil | ..... | ..... | 1,100 | 13 | 13⅜ | 13 | 13 | + ⅛ |
| 63⅜ | 49¼ | 58⅓ | 31 | (sh) 2,316,401 | N.P. | Marland Oil Co | ..... | Mar. 31, 27 | 77,000 | 34¼ | 37¾ | 33⅞ | 36⅝ | + 3⅛ |
| 250 | 225 | 250 | 200 | $ 45,942,800 | $100 | Mexican Petroleum | $3Q | Oct. 20, 27 | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | 12,000,000 | 100 | do pfd | $2Q | Oct. 20, 27 | ..... | ..... | ..... | ..... | ..... | ..... |
| 13¾ | 6 | 9¼ | 3 | (sh) 945,839 | N.P. | Mexican Seaboard | ..... | Nov. 15, 24 | 1,600 | 4 | 4⅛ | 4 | 4⅛ | + ⅛ |
| 37 | 27½ | 39⅝ | 25½ | (sh) 1,357,800 | N.P. | Mid-Continent Petroleum | ..... | Aug. 1, 27 | 34,900 | 26½ | 30¼ | 26¼ | 29 | + 2½ |
| 104¼ | 90 | 105 | 97 | $ 6,718,000 | $100 | do pfd | $1.75Q | Sept. 1, 27 | 1,700 | 103 | 103¾ | 101 | 103 | — ⅛ |
| 2⅛ | ⅛ | 3¾ | 1⅝ | 24,435,000 | 10 | Middle States | ..... | July 1, 23 | 17,000 | 2⅛ | 2⅝ | 2 | 2½ | + ⅛ |
| 1⅝ | ⅛ | 2⅝ | 1⅛ | 5,356,660 | ... | do ctfs | ..... | ..... | 1,700 | 1⅝ | 1⅝ | 1⅝ | 1⅝ | + ⅛ |
| 2¼ | 1 | 1⅞ | 1 | (sh) 3,500,000 | N.P. | Pacific Oil | ..... | ..... | 4,200 | 1¼ | 1¼ | 1¼ | 1¼ | 0 |
| 76½ | 56⅛ | 65⅞ | 45⅛ | $ 48,807,500 | $ 50 | Pan American P. & T. | $1Q | Oct. 20, 27 | 5,400 | 46½ | 50¾ | 46½ | 49 | + 2¾ |
| 78⅜ | 56⅛ | 66⅝ | 45⅝ | 121,094,850 | 50 | do B | $1Q | Oct. 20, 27 | 39,800 | 47¼ | 51¼ | 47¼ | 49⅝ | + 2⅜ |
| 46 | 30 | 37⅞ | 16¾ | (sh) 400,000 | N.P. | Pan American Western B | ..... | Jan. 30, 27 | 9,100 | 19⅛ | 21¾ | 19⅛ | 21⅝ | + 2⅜ |
| 62 | 4⅛ | 18⅛ | 8 | (sh) 198,770 | N.P. | Panhandle P. & R | ..... | ..... | 3,000 | 10 | 11½ | 10 | 11¼ | + 1¼ |
| 99⅛ | 51 | 83¾ | 58¾ | $ 2,935,200 | $100 | do pfd | ..... | July 2, 23 | 100 | 68⅛ | 68⅛ | 68⅛ | 68⅛ | + 7⅝ |
| 57⅜ | 40 | 60¼ | 36½ | (sh) 2,406,796 | N.P. | Phillips Petroleum | 75cQ | Oct. 1, 27 | 86,600 | 41¼ | 44⅛ | 40¾ | 42⅝ | + 1⅞ |
| 1⅝ | ⅛ | 1⅜ | ⅛ | $ 29,622,925 | $ 25 | Pierce Oil Corp | ..... | ..... | 3,100 | ⅝ | ¾ | ⅝ | ¾ | + ⅛ |
| 27⅜ | 11⅞ | 24 | 13½ | 15,000,000 | 100 | do pfd | ..... | Feb. 1, 22 | ..... | ..... | ..... | ..... | ..... | ..... |
| 7 | 2¼ | 5⅛ | 2½ | (sh) 2,500,000 | N.P. | Pierce Petroleum | ..... | ..... | 3,600 | 3¼ | 3⅜ | 3⅛ | 3⅜ | + ⅛ |
| 20¾ | 11 | 33⅞ | 16¾ | $ 37,450,850 | $50 | Producers & Refiners | ..... | Sept. 15, 23 | 20,900 | 26⅛ | 29¾ | 25⅛ | 27½ | + 1½ |
| 41¾ | 30¾ | 50 | 36⅞ | 2,845,350 | 50 | do pfd | ..... | May 1, 25 | 110 | 43 | 43 | 41 | 43 | + 1⅞ |
| 31 | 25¼ | 33½ | 25 | 75,939,250 | 25 | Pure Oil Co | 37½cQ | Sept. 1, 27 | 26,400 | 25⅛ | 27⅜ | 25⅛ | 26⅜ | + 1⅜ |
| 112¾ | 106 | 114 | 111⅜ | 13,000,000 | 100 | do 8% pfd | $2Q | Oct. 1, 27 | 100 | 113 | 113 | 113 | 113 | 0 |
| 57⅜ | 47⅛ | 58 | 45 | (sh) 616,605 | 13.40 | Royal Dutch, N. Y. shares | $1.80 | Aug. 2, 27 | 2,800 | 45⅛ | 46¾ | †45 | 46¾ | + 1¼ |
| 40⅝ | 40½ | 47⅞ | 41¾ | (sh) 78,389 | F2 | Shell Transport & T | $1.45 | July 22, 27 | 1,800 | 41¾ | 43¼ | 41¾ | 43¼ | + 1⅞ |
| 31 | 24 | 31¾ | 24⅝ | (sh) 10,000,000 | N.P. | Shell Union Oil | 35cQ | Sept. 30, 27 | 9,200 | 25¼ | 27⅛ | 25¼ | 26¾ | + 1½ |
| 114 | 103 | 111 | 107¾ | $ 18,350,400 | $100 | do pfd | $1½Q | Aug. 15, 27 | ..... | ..... | ..... | ..... | ..... | ..... |
| 28⅝ | 15⅛ | 22¾ | 14¼ | 7,208,080 | 10 | Simms Petroleum | ..... | Apr. 1, 27 | 17,800 | 18 | 19½ | 17⅝ | 19½ | + 2¼ |
| 24⅞ | 16¾ | 22⅝ | 15 | (sh) 4,501,339 | N.P. | Sinclair Consolidated | ..... | May 31, 24 | 30,000 | 15⅝ | 16⅝ | 15¼ | 16⅛ | + ⅞ |
| 99½ | 90 | 103¼ | 97 | $ 16,907,000 | $100 | do pfd | $2Q | Aug. 15, 27 | 100 | 97¾ | 97¾ | 97¾ | 97¾ | — ¼ |
| 37¼ | 26⅝ | 37⅝ | 24⅛ | 27,396,590 | 25 | Skelly Oil Co | 50cQ | Sept. 15, 27 | 12,500 | 26⅛ | 27⅞ | 26¼ | 27½ | + 1½ |
| 63⅜ | 52⅝ | 60¾ | 50⅜ | (sh) 13,016,434 | N.P. | S. O. California | 62½cQ | Sept. 15, 27 | 53,100 | 54⅜ | 57½ | 54⅜ | 56½ | + 2⅛ |
| 46⅝ | 37⅜ | 43¾ | 35⅛ | $ 606,243,050 | $25 | S. O. New Jersey | ‡25cQ | Sept. 15, 27 | 59,600 | 39 | 40½ | 39 | 40 | + 1¼ |
| 33¼ | 32½ | 34⅛ | 29¾ | 424,348,275 | 25 | S. O. New York | 40cQ | Sept. 15, 27 | 65,500 | 30⅞ | 33⅛ | 30¾ | 32 | + 1 |
| 41⅜ | 30⅞ | 34⅞ | 30 | (sh) 1,171,508 | N.P. | Sun Oil | 25cQ | Sept. 15, 27 | 3,900 | 30⅞ | 33¼ | 30½ | 33¼ | + 2½ |
| ..... | ..... | 100¼ | 99 | $ 5,000,000 | $100 | do pfd | $1.50Q | Sept. 1, 27 | 1,100 | 100 | 100¾ | 100 | 100¾ | + ⅜ |
| 5¼ | 1 | 6½ | 3½ | (sh) 1,121,368 | N.P. | Superior Oil Corp | ..... | Dec. 20, 20 | 5,900 | 3½ | 4⅛ | 3¼ | 3⅞ | + ⅜ |
| 57⅛ | 53⅜ | 58 | 45 | $ 180,428,225 | 25 | The Texas Corp | 75cQ | Oct. 1, 27 | 41,300 | 50 | 52½ | 50 | 52 | + 2 |
| 19½ | 12 | 18⅞ | 12 | 8,380,340 | 10 | Texas Pacific Coal & Oil | 15c | Sept. 30, 27 | 9,700 | 13¼ | 14½ | 13¼ | 14⅛ | + 1 |
| 39¼ | 37 | 29⅛ | 19 | (sh) 2,168,264 | N.P. | Tide Water Oil Co | 20cQ | Sept. 30, 27 | 300 | 22¼ | 22½ | 22¼ | 22¼ | — ¼ |
| 103 | 87¼ | 90¾ | 85¾ | $ 20,705,200 | $100 | do 5% pfd | $1.25Q | Aug. 15, 27 | 800 | 86½ | 86½ | †85¾ | 86 | + ⅜ |
| .... | .... | 19⅛ | 15⅜ | (sh) 4,795,934 | N.P. | Tide Water Associated | ..... | Aug. 1, 27 | 16,900 | 16⅝ | 17½ | 16⅝ | 17⅜ | + ¾ |
| .... | .... | 90¾ | 85 | $ 72,795,900 | $100 | do pfd | $1.50Q | Oct. 1, 27 | 1,700 | 86 | 87¾ | 86 | 87¾ | + 1½ |
| 5½ | 3 | 9¾ | 3¾ | (sh) 3,742,029 | N.P. | Transcontinental Oil | ..... | ..... | 152,300 | 7⅝ | 8¾ | 7½ | 8½ | + ⅛ |
| 58⅜ | 37¼ | 56½ | 39⅜ | $ 40,759,475 | $ 25 | Union Oil of California | 50cQ | Nov. 10, 72 | 19,800 | 44 | 46⅜ | 43¾ | 45 | + 1¼ |
| 120⅜ | 84¼ | 116½ | 94 | 30,734,000 | 100 | Union Tank Car Co | $1.25Q | Sept. 1, 27 | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | 28½ | 24½ | (sh) 240,000 | N.P. | Warner Quinlan | 50cQ | Oct. 1, 27 | 500 | 25¼ | 25⅞ | 25⅛ | 25⅞ | + 3¼ |
| 29¾ | 25¼ | 27½ | 21¼ | (sh) 490,000 | N.P. | White Eagle Oil & Refining | 50cQ | Oct. 20, 27 | 2,900 | 21⅜ | 23¼ | †21¼ | 23 | + 1½ |

*New High †New Low xEx-Dividend ‡Also extras Total Sales 1,291,140

## Cleveland Stock Market

November 4

| | Par Value | Bid | Asked | Last Sale |
|---|---|---|---|---|
| Canfield Oil Co. | 100 | .... | .... | .... |
| do pfd | 100 | 100 | .... | 100 |
| Fred G. Clark | 10 | .... | 3½ | 2 |
| National Refining Co. | 25 | x33⅝ | 34¾ | 34 |
| do pfd | 100 | 130½ | .... | 130½ |
| Paragon Refining Co. | 25 | 8⅜ | 8⅞ | 8¼ |
| do pfd | 100 | 95 | .... | 95 |

x Ex-Dividend

## Oil Dividends

| | Amount | Payable | Stock of Record |
|---|---|---|---|
| Associated Oil q. | 50c | Dec. 24 | Nov. 30 |
| Buckeye P. L. q. | $1 | Dec. 15 | Nov. 18 |
| International Pet. | 25c | Nov. 15 | ..... |
| Mid-Cont. Pet. pfd. q. | $1.75 | Dec. 1 | Nov. 15 |
| Southern P. L. special | .82 | Dec. 1 | Nov. 15 |
| S. O. California q. | 62½c | Dec. 15 | Nov. 15 |
| Union Tank Car q. | $1.25 | Dec. 1 | Nov. 16 |
| Vacuum Oil q. | 50c | Dec. 20 | Nov. 30 |
| do extra | 50c | Dec. 20 | Nov. 30 |
| do special | $1 | Dec. 20 | Nov. 30 |

## PITTSBURGH STOCK EXCHANGE

| 1926 High | 1926 Low | 1927 High | 1927 Low | Par Value | Stocks | Transactions Week Ended Nov. 4 Sales | First | High | Low | Last | Ch'ge |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 8½ | 5¾ | 9⅛ | 6⅞ | $ 10 | Arkansas Nat. Gas | 3,708 | 8⅞ | 8⅞ | 8½ | 8¾ | — ⅛ |
| 90½ | 79¾ | 98⅝ | 84 | 100 | Columbia Gas | 50 | 88 | 88 | 88 | 88 | — 1⅛ |
| 101⅜ | 95 | 107 | 100 | 100 | do pfd | ..... | ..... | ..... | ..... | ..... | ..... |
| 17 | 12½ | 15 | 9½ | 10 | Devonian Oil | ..... | ..... | ..... | ..... | ..... | ..... |
| 116½ | 112 | 116¾ | 115 | 100 | Duquesne Lt. 7% pfd. | ..... | ..... | ..... | ..... | ..... | ..... |
| 10 | 5⅛ | 12¼ | 6 | N.P. | Houston Gulf Gas | 15 | 9¾ | 9¾ | 9¾ | 9¾ | — ⅛ |
| 46 | 39 | 55¾ | 37½ | $ 25 | Lone Star Gas | 7,186 | 54½ | 54¾ | 54 | 54 | — ½ |
| 47⅜ | 33⅛ | 22¾ | 22¼ | 25 | Ohio Fuel Corp. | ..... | ..... | ..... | ..... | ..... | ..... |
| 47½ | 42 | 21⅝ | 21 | .... | do ctfs | ..... | ..... | ..... | ..... | ..... | ..... |
| 6¾ | 5 | 6 | 5 | .... | Ohio Oil & Gas | ..... | ..... | ..... | ..... | ..... | ..... |
| 34 | 21 | 21 | 21 | 25 | Oklahoma Nat. Gas | ..... | ..... | ..... | ..... | ..... | ..... |
| 21 | 19¼ | 23¾ | 20¾ | .... | do ctfs | ..... | ..... | ..... | ..... | ..... | ..... |
| 5⅜ | 3⅛ | 3⅞ | 3 | 5 | Pittsburgh Oil & Gas | 190 | 3¼ | 3¼ | 3¼ | 3¼ | 0 |
| 10 | 7½ | 8 | 5½ | 10 | Salt Creek Cons. | 100 | 6⅛ | 6⅛ | 6⅛ | 6⅛ | 0 |
| 27 | 8 | 26½ | 17 | 10 | Tidal Osage | 10 | 21¼ | 21¼ | 21¼ | 21¼ | — ¾ |
| 45 | 40 | 43 | 33 | N.P. | Waverly Oil Wks. "A" | ..... | ..... | ..... | ..... | ..... | ..... |

## PITTSBURGH CURB EXCHANGE

| 1926 High | 1926 Low | 1927 High | 1927 Low | Par Value | Stocks | Transactions Week Ended Nov. 4 Sales | First | High | Low | Last | Ch'ge |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3⅜ | 2½ | 3½ | 2¾ | $ 5 | Columbia Synd. | ..... | ..... | ..... | ..... | ..... | ..... |
| 20 | .06 | .18 | .18 | 5 | Duquesne Oil | ..... | ..... | ..... | ..... | ..... | ..... |
| 91½ | 85 | 95 | 88 | 25 | Gulf Oil Corp. | ..... | ..... | ..... | ..... | ..... | ..... |
| 79 | 79 | 105 | 93 | 100 | Houston Gulf Gas pfd | ..... | ..... | ..... | ..... | ..... | ..... |
| 12 | 7½ | 10¾ | 6¼ | N.P. | Leonard Oil & Dev. | ..... | ..... | ..... | ..... | ..... | ..... |
| 30¼ | 29 | 32 | 31¾ | $ 25 | Oklahoma Gas | ..... | ..... | ..... | ..... | ..... | ..... |
| 2 | .15 | 2.70 | .60 | 10 | Omar Oil & Gas | 1,600 | .65 | .65 | .65 | .65 | 0 |
| .... | .... | 2¼ | 1¾ | .... | Pittsburgh Oil Dev. | ..... | ..... | ..... | ..... | ..... | ..... |
| 2 | 1¾ | 2¾ | 2¼ | 5 | do pfd | ..... | ..... | ..... | ..... | ..... | ..... |
| 33½ | 20 | 31 | 19 | 10 | Plymouth Oil | 1,250 | 21 | 22 | 21 | 22 | + 1¾ |
| 7 | 3 | 6 | 5 | 5 | States Oil | ..... | ..... | ..... | ..... | ..... | ..... |
| 3½ | 2 | 3¾ | 1½ | 1 | Texon Oil & Land | 400 | 2 | 2 | 1⅞ | 1⅞ | + ⅛ |
| 25¾ | 8 | 23¾ | 18 | 10 | Tidal Osage (non-vtg) | ..... | ..... | ..... | ..... | ..... | ..... |

*New high †New Low xEx-Dividend

# Standard Oil Stock Traded in New York

| 1926 High | 1926 Low | 1927 High | 1927 Low | Outstanding Capital | Par Value | Stocks | Div. Rate | Last Paid | Transactions Week Ended Nov. 5 Sales | First | High | Low | Last | Change |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 21 | 16⅜ | 21⅝ | 17⅝ | £ 4,000,000 | £1 | Anglo-American Oil | 60¾c | May 31, 27 | 1,600 | 18⅝ | 19 | 18⅝ | 19 | + ⅛ |
| 20¼ | 16½ | 20⅛ | 17⅜ | ..... | £1 | do ctfs. non-voting | ..... | ..... | 100 | 18¾ | 18¾ | 18¾ | 18¾ | + ⅜ |
| 2¼ | .75 | 1⅝ | .75 | (sh) 500,000 | N.P. | Atlantic Lobos | ..... | ..... | 300 | 1 | 1 | 1 | 1 | 0 |
| 5 | 2⅞ | 4½ | 2½ | $ 000,000 | $ 10 | do pfd | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 75 | 65 | 69 | 50 | 1,000,000 | 25 | Borne Scrymser | ‡$1S.A. | Oct. 15, 27 | ..... | ..... | ..... | ..... | ..... | ..... |
| 59½ | 42 | 59 | 45 | 10,000,000 | 50 | Buckeye Pipe Line | $1Q | Sept. 15, 27 | 900 | 55½ | 57½ | 55 | 57½ | + 1½ |
| 82½ | 65 | 126 | 76½ | 3,000,000 | 25 | Chesebrough Mfg | $1Q | Sept. 30, 27 | 500 | 119 | 119 | 117 | 117 | — 2 |
| 25⅞ | 17½ | 22⅝ | 16¼ | 38,805,260 | 10 | Continental Oil | 25cQ | Sept. 15, 27 | 2,000 | 18 | 18¼ | 18 | 18⅛ | + ⅛ |
| 137 | 102 | 137 | 89 | 3,000,000 | 100 | Cumberland Pipe Line | $2Q | Sept. 15, 27 | 100 | 94 | 95 | 94 | 95 | + 2½ |
| 63¾ | 43 | 61 | 47 | 5,000,000 | 100 | Eureka Pipe Line | $1Q | Nov. 1, 27 | 150 | 60 | 60 | 60 | 60 | + 1½ |
| 32½ | 9⅛ | 13½ | 6½ | 16,000,000 | 100 | Galena Signal Oil | ..... | June 30, 25 | 700 | 7 | 7 | †6½ | 7 | — ½ |
| 94½ | 35 | 59⅜ | 31 | 4,000,000 | 100 | do new pfd | ..... | June 30, 26 | 10 | 32 | 32 | 32 | 32 | 0 |
| 97½ | 40 | 60⅛ | 36 | 2,000,000 | 100 | do old pfd | ..... | June 30, 26 | ..... | ..... | ..... | ..... | ..... | ..... |
| 99⅜ | 52 | 65¼ | 54 | 73,117,577 | 25 | Humble Oil & Refining | ‡30cQ | Oct. 1, 27 | 23,100 | 62¼ | 64¾ | 61¾ | 64⅛ | + 2⅜ |
| 144½ | 125¼ | 176 | 123¾ | 20,000,000 | 100 | Illinois Pipe Line | $6S.A. | June 15, 27 | 3,400 | 170½ | *176 | 169½ | 175¼ | + 3¼ |
| 39¾ | 32½ | 64¾ | 37¾ | (sh) 6,491,952 | N.P. | Imperial of Canada | ‡25cQ | Sept. 1, 27 | 8,300 | 58¾ | 61¾ | 58½ | 61¾ | + 2¼ |
| 70 | 54¼ | 86½ | 61 | $ 5,000,000 | $50 | Indiana Pipe Line | $1Q | Aug. 15, 27 | 5,300 | 76¾ | *86½ | 76¾ | 83 | + 6¼ |
| 35¼ | 28¾ | 34⅞ | 28 | (sh) 7,118,138 | N.P. | International Petroleum | 25c | June 15, 27 | 31,900 | 31¾ | 33⅞ | 31½ | 33⅞ | + 2⅛ |
| 20¾ | 12⅛ | 20½ | 13⅛ | $ 6,362,500 | $12½ | National Transit Co | 25cQ | Sept. 15, 27 | 8,800 | 18⅝ | *20½ | 18⅜ | 20⅜ | + 1⅜ |
| 51½ | 27⅛ | 37⅜ | 31¼ | 5,000,000 | 100 | New York Transit | ..... | July 15, 26 | 800 | 35⅞ | *37¾ | 35⅞ | 37¾ | + 2¼ |
| 80½ | 64 | 91 | 70 | 4,000,000 | 100 | Northern Pipe Line | $3S.A. | July 1, 27 | 250 | 85 | 89 | 85 | 89 | + 5¼ |
| 67⅜ | 55¾ | 64¼ | 52 | 60,000,000 | 25 | Ohio Oil Co | ‡50cQ | Sept. 15, 27 | 9,000 | 59½ | 64 | 59½ | 64 | + 4¼ |
| 24¾ | 15 | 38½ | 12 | 10,000,000 | 25 | Penn Mex. Fuel | ..... | May 21, 25 | 9,300 | 29⅞ | *38½ | 29⅞ | 38¼ | + 8¼ |
| 60¼ | 48 | 55½ | 45⅜ | 60,000,000 | 25 | Prairie Oil & Gas | ..... | Aug. 31, 27 | 10,800 | 48¾ | 51¼ | 48½ | 50¼ | + 1⅜ |
| 137½ | 122¼ | 186 | 132 | 81,000,000 | 100 | Prairie Pipe Line | $2.50Q | Oct. 31, 27 | 450 | 175½ | 181 | 175¼ | 181½ | + 5½ |
| 220 | 184½ | 201¼ | 175½ | 4,000,000 | 100 | Solar Refining | $5S.A. | June 20, 27 | 30 | 180 | 183 | 180 | 183 | + 5 |
| 27 | 21 | 27¼ | 15⅛ | 5,000,000 | 50 | Southern Pipe Line | ..... | Mar. 1, 26 | 1,100 | 23¼ | 23⅞ | 22¼ | 23¼ | + 1¼ |
| 50 | 34¼ | 41⅝ | 34½ | 20,000,000 | 25 | South Penn Oil | 50cQ | Sept. 30, 27 | 1,700 | 37⅜ | 40 | 37⅜ | 39⅞ | + 2⅜ |
| 57 | 49 | 77 | 55¼ | 3,500,000 | 100 | South West Pa. Pipe Lines | $1Q | Oct. 1, 27 | 300 | 71 | 74½ | 71 | 74½ | + 3½ |
| 70⅛ | 60⅛ | 75⅞ | 64¾ | 228,415,463 | 25 | S. O. Indiana | ‡62½cQ | Sept. 15, 27 | 37,600 | 72¾ | 75¼ | 72½ | 74⅝ | + 2⅛ |
| 36½ | 16½ | 20⅝ | 15½ | 8,000,000 | 25 | S. O. Kansas | ..... | June 16, 24 | 600 | 15⅜ | 16⅞ | †15½ | 16⅞ | + 1¼ |
| 134¾ | 108 | 123¾ | 111½ | 17,012,599 | 25 | S. O. Kentucky | $1Q | Sept. 30, 27 | 2,000 | 118⅞ | 122⅜ | 118⅞ | 122 | + 2¼ |
| 51⅛ | 42 | 49½ | 42 | 4,559,850 | 25 | S. O. Nebraska | 63cQ | Sept. 20, 27 | 500 | 42¾ | 43⅞ | 42¾ | 43¾ | + ¾ |
| 672 | 288 | 86¾ | 73 | 14,000,000 | 25 | S. O. Ohio | 62½cQ | Oct. 1, 27 | 1,100 | 74¾ | 76½ | 74½ | 76½ | + 2 |
| 120⅛ | 116½ | 122 | 117¼ | 7,000,000 | 100 | do pfd | $1.75Q | Sept. 1, 27 | ..... | ..... | ..... | ..... | ..... | ..... |
| 23 | 15½ | 21 | 14½ | 861,466 | 25 | Swan Finch Co | ..... | Nov. 1, 19 | 50 | 20¼ | 20¼ | 20¼ | 20¼ | 0 |
| 109¾ | 90¼ | 136½ | 95⅛ | 62,470,800 | 25 | Vacuum Oil | ‡50cQ | Sept. 20, 27 | 10,100 | 131 | 134¼ | 128¾ | 133 | + 2½ |

*New high †New low xEx dividend ‡Also extras.

# New York Curb Bonds

Week Ending Nov. 4

| | High | Low | Last | Ch'ge |
|---|---|---|---|---|
| Beacon Oil 6s '36 | 99 | 99 | 99 | — ⅛ |
| Cities Service 5s '66 | 90 | 89¾ | 89¾ | — ¼ |
| Cities Service 6s '66 | 101⅝ | 101⅜ | 101½ | + ⅛ |
| Cities Service G 5½s '42 | 93¾ | 93½ | 93½ | — ⅛ |
| Empire Oil 5½s '42 | 92⅛ | 92 | 92 | — ¼ |
| Galena S. O. 7s '30 | 93 | 92½ | 93 | +1 |
| Gen'l. Pet. 6s '28 | 100¼ | 100¼ | 100¼ | 0 |
| Gulf Oil 5s '37 | 100¾ | 100¼ | 100¼ | 0 |
| Gulf Oil 5½s '28 | 100⅜ | 100 | 100 | — ⅜ |
| Independent Oil 6s '39 | 96 | 94¼ | 95⅞ | +1⅞ |
| Pure Oil 6½s '33 | 103¼ | 102⅞ | 103 | — ⅛ |
| Richfield Oil 6s wi. '41 | 95¾ | 95 | 95¾ | +2 |
| Shell Oil 5½s '39 | ..... | ..... | ..... | ..... |
| S. O. N. Y. 6½s '33 | 104½ | 104 | 104⅜ | + ⅛ |
| S. O. N. Y. 4½s '51 | ..... | ..... | ..... | ..... |
| Sun Oil 5½s '39 | 101⅜ | 100⅞ | 101 | + ¼ |
| Trans. Cont. Oil 7s '30 | 114 | 109 | 113½ | +2⅝ |
| United Oil Prod. 8s '31 | 68½ | 68½ | 68½ | + ½ |

# New York Bonds

Week Ending Nov. 4

| | High | Low | Last | Ch'ge |
|---|---|---|---|---|
| Amer. Rep. deb. 6s | 101 | 100¼ | 101 | 0 |
| Assoc. Oil gold 6s | 103 | 102⅝ | 103 | 0 |
| Atlantic Refg. deb. 5s | 103 | 102⅝ | 103 | +1 |
| Barnsdall Corp. 6s | 100½ | 97¾ | 99¾ | +2 |
| Barnsdall Corp. 6s ex war. | 91 | 90 | 90¾ | + ¼ |
| Cal. Pet. 5s | 95¼ | 94⅞ | 95 | 0 |
| Cal. Pet. 5½s | 100¼ | 99⅜ | 100¼ | + ¼ |
| General Asphalt 6s | 111⅜ | 110 | 110⅜ | —1⅜ |
| General Petroleum 5s | 101¾ | 101⅝ | 101⅝ | 0 |
| Humble Oil & Refg. 5½s | 102⅝ | 102¼ | 102¼ | — ⅛ |
| Humble Oil 5s | 99⅞ | 99⅜ | 99¾ | + ¼ |
| Mid-Cont. Pet. 6½s | 105 | 104⅝ | 105 | + ¼ |
| Pan Amer. P & T 7s | 105⅜ | 105¼ | 105¼ | 0 |
| Pan Amer. P & T 6s | 103½ | 102⅜ | 103 | + ½ |
| Pan Amer. P & T 6s | 95⅜ | 94⅛ | 95¼ | +1½ |
| Prod. & Refiners 8s ex war | 114½ | 113 | 113 | +1½ |
| Prod. & Refiners 8s war. | 114½ | 114½ | 114½ | +2⅜ |
| Simms Pet. cvt. 6s | 102⅞ | 100¼ | 102 | +1⅝ |
| Sinclair Con Oil Col. 7s | 98½ | 98 | 98 | — ⅞ |
| Sinclair Con Oil con 6½s | 94 | 93½ | 93½ | — ½ |
| Sinclair Con. Oil 6s-D | 98½ | 97¼ | 98 | — ⅛ |
| Sinclair Crude Oil 6s | 100⅜ | 100⅛ | 100¼ | 0 |
| Sinclair Pipeline 5s | 93¾ | 93¼ | 93¼ | — ⅜ |
| Skelly Oil 5½s | 95 | 94⅜ | 95 | + ¼ |
| S. O. of N. Y. 4½s | 96½ | 96 | 96½ | + ⅜ |
| S. O. of N. J. deb. 5s | 103¼ | 103 | 103¼ | + ⅜ |
| Union Oil of Cal. 6s-A | 108⅞ | 108⅞ | 108⅞ | — ⅛ |
| Union Oil of Cal. 5s-C | 98⅞ | 98¾ | 98⅞ | + ⅜ |
| White Eagle 5½s war | 95 | 95 | 95 | 0 |

# New York Curb Market

| 1926 High | 1926 Low | 1927 High | 1927 Low | Par Value | Stocks | Transactions Week Ended Nov. 5 Sales | First | High | Low | Last | Change |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6¾ | 45 | 2⅞ | .55 | $5 | Amer. Con. Oilfields | 126,600 | .87 | .95 | .80 | .90 | + .01 |
| 14½ | 4 | 7½ | 3 | N.P. | Amer. Maracaibo | 4,400 | 3 | 3¼ | 3 | 3⅛ | — ⅛ |
| 8⅜ | 5⅜ | 9¾ | 6¾ | $10 | Arkansas Nat. Gas | 4,300 | 8⅞ | 9 | 8½ | 9 | + ½ |
| 20⅜ | 14⅛ | 20½ | 15½ | N.P. | Beacon Oil | ..... | ..... | ..... | ..... | ..... | ..... |
| 85¼ | 60 | 35 | 20½ | N.P. | British American | 1,400 | 32¾ | *35 | 32¾ | 35 | + 3 |
| 28⅜ | 9¼ | 28¼ | 14⅜ | 25c | Carib Syndicate(new) | 500 | 18⅜ | 19 | 18 | 18½ | — ½ |
| ..... | ..... | 26 | 16½ | ..... | do ctfs. of deposit | ..... | ..... | ..... | ..... | ..... | ..... |
| 51 | 37½ | 58¾ | 40¼ | $20 | Cities Service | 2,000 | 50 | 50⅛ | 49¾ | 50 | — ⅛ |
| 92½ | 82⅜ | 95 | 87 | 100 | do pfd | 2,000 | 93⅞ | 94 | 93¾ | 94 | 0 |
| 8¾ | 7⅜ | 8¾ | 7⅜ | 10 | do pfd. B | 100 | 8⅝ | 8⅝ | 8⅝ | 8⅝ | 0 |
| 25¼ | 19 | 29¼ | 22½ | 10 | do banker's shares | ..... | ..... | ..... | ..... | ..... | ..... |
| 3½ | 1¾ | 3⅞ | 1¾ | $1 | Colombia Syndicate | 3,100 | 2⅜ | 2⅜ | 1⅞ | 1⅞ | — ⅛ |
| 10⅛ | 8⅛ | 9½ | 6⅜ | 10 | Consolidated Royal | 400 | 6¾ | †6⅜ | 6⅜ | 6⅜ | — ⅜ |
| 16 | 10 | 14⅞ | 9⅞ | N.P. | Creole Syndicate | 41,000 | 10 | 11⅜ | 10 | 11⅜ | + 1¼ |
| 7⅜ | 1⅜ | 3 | x63 | N.P. | Crown Central | 300 | 1 | 1 | .98 | .98 | — 2 |
| 8½ | ½ | 12 | 4 | ... | Darby Petroleum | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | 11½ | 5 | ... | do trust ctfs. | ..... | ..... | ..... | ..... | ..... | ..... |
| 4 | 1¾ | 2½ | 1¼ | N.P. | Derby Oil & Refining | ..... | ..... | ..... | ..... | ..... | ..... |
| 19 | 13 | 16¾ | 7⅜ | N.P. | do pfd | ..... | ..... | ..... | ..... | ..... | ..... |
| 7½ | 2½ | 3¾ | 1 | N.P. | Gibson Oil | 18,500 | 2 | 2⅜ | 2 | 2⅛ | 0 |
| 2 | .63 | 1⅜ | 40 | N.P. | Gilliland ctfs. | 1,000 | 40 | 40 | 40 | 40 | 0 |
| 98 | 82 | .98 | 86⅛ | $25 | Gulf Oil Corp. | 19,700 | 93½ | *98 | 93 | 98 | + 4⅜ |
| 3⅜ | 1 | 2¼ | 1⅛ | N.P. | Kirby Petroleum | 200 | 1⅛ | 1⅛ | 1⅛ | 1⅛ | — ⅛ |
| 12¼ | 5¾ | 10⅜ | 6 | N.P. | Leonard Oil & Dev. | 5,000 | 7½ | 7½ | 6⅝ | 7¼ | — ⅛ |
| 27 | 20 | 27½ | 20 | N.P. | Lion Oil & Refg. | 2,700 | 20¼ | 21 | 20¼ | 21 | + ¾ |
| 46 | 31 | 56 | 37 | $25 | Lone Star Gas | 3,300 | 54⅝ | 54¾ | 54 | 54 | — ½ |
| 2¾ | 2 | 2⅞ | .87 | 1 | Magdalena Synd. | 8,400 | 1⅛ | 1½ | 96 | 1½ | + ½ |
| 5½ | 1⅞ | 3 | 1½ | 10 | Mexican-Panuco | ..... | ..... | ..... | ..... | ..... | ..... |
| 1¾ | 1¼ | 1½ | 1 | 1 | Mountain & Gulf | 200 | 1⅛ | 1⅛ | 1⅛ | 1⅛ | — ⅛ |
| 26 | 23 | 26⅞ | 22¾ | 10 | Mountain Producers | 8,400 | 24⅜ | 25⅛ | 24¼ | 25 | + ¾ |
| 6¾ | 5 | 5⅞ | 4⅝ | 5 | New Bradford | 800 | 4¾ | 4¾ | 4⅝ | 4¾ | 0 |
| 11¾ | 2 | 6¼ | 4 | 10 | New England Fuel | ..... | ..... | ..... | ..... | ..... | ..... |
| 17 | 9⅛ | 16 | 9¼ | 1 | New Mex. & Ariz. | 1,100 | 9¾ | 9¾ | 9½ | 9½ | — ⅛ |
| 17 | 8 | 13¼ | 9 | 25 | New York Oil | 1,500 | 11 | 11½ | 11 | 11½ | + ½ |
| 12⅛ | 8¾ | 12⅜ | 10 | N.P. | North Cent. Texas | 100 | 10¾ | 10¾ | 10¾ | 10¾ | + ⅜ |
| 44¾ | 33 | ..... | ..... | $25 | Ohio Fuel Corp. | ..... | ..... | ..... | ..... | ..... | ..... |
| 33 | 28½ | 27½ | 21¼ | ... | Okla. Nat. Gas ctfs. | 900 | 2¼ | 2⅞ | 2¼ | 2⅞ | + ⅛ |
| 10⅛ | 5¼ | 9¾ | 1¾ | N.P. | Pandem | 800 | 8¼ | 8¼ | 8¼ | 8¼ | 0 |
| 12¼ | 11¾ | 12⅜ | 7 | N.P. | Pantapec Oil | ..... | ..... | ..... | ..... | ..... | ..... |
| 2¾ | .20 | .37 | .25 | N.P. | Peer Oil Corp. | 300 | 6¾ | 7⅛ | 6¾ | 7⅛ | + ⅜ |
| 22¾ | 12 | 13½ | 6 | $10 | Pennok Oil | 100 | 13½ | 13½ | 13½ | 13½ | 0 |
| 38 | 14⅛ | 24⅜ | 13½ | 25 | Red Bank Oil | 22,500 | 6½ | 7½ | 6½ | 7⅜ | + ½ |
| 30¼ | 12 | 15½ | 2 | N.P. | Reiter-Foster | 500 | 21½ | 21½ | 21½ | 21½ | + ½ |
| 27½ | 22 | 27½ | 15 | $25 | Richfield Oil | 300 | 5½ | 5⅝ | 5½ | 5¾ | + ¼ |
| 7½ | 4⅛ | 7 | 4⅛ | N.P. | Ryan Consolidated | 200 | 6½ | 6½ | 6½ | 6½ | + ½ |
| 10 | 7½ | 8 | 6 | $10 | Salt Creek Cons. | 7,400 | 29¼ | 31¼ | 29¼ | 30½ | + 1⅛ |
| 36 | 26⅞ | 32 | 27¼ | 10 | Salt Creek Prod. | 600 | 3 | 3½ | 3 | 3½ | + ½ |
| 4⅜ | 1⅛ | 7 | 2 | 5 | Savoy Oil | 1,000 | 20 | 21¾ | 19½ | 21⅝ | + 1⅜ |
| 27 | 7⅜ | 26½ | 17 | 10 | Tidal Osage | 200 | 18½ | 19⅜ | 18½ | 19½ | + ½ |
| 25¾ | 7⅜ | 23¾ | 15 | 10 | do non-voting | 200 | 78 | 79 | 78 | 79 | + 4½ |
| ..... | ..... | 88 | 63½ | 100 | Transcontinental pfd. | 1,000 | 5¼ | 5⅜ | 5 | 5 | 0 |
| 3 | 4⅛ | 7⅜ | 4¼ | 5 | Venezuelan Petrol. | x800 | 22⅜ | 22 | 21½ | 22 | + ⅜ |
| 31⅜ | 22 | 32⅜ | 20⅜ | N.P. | Wilcox Oil & Gas | 700 | 4⅞ | 5½ | 4¾ | 5½ | + ½ |
| 9½ | 4⅜ | 8 | 4¾ | $1 | Woodley Petroleum | | | | | | |

*New High †New Low xEx Dividend

## Continental Oil Issues $12,000,000 Bonds

CLEVELAND, Nov. 7.—Continental Oil Co. is offering $12,000 000 5¼ per cent 10-year gold debentures at 99 and interest to yield 5.375 per cent. The issue has been underwritten by the National City Co. and Carl H. Pforzheimer & Co. The purpose of the issue, President S. H. Keoughan of Continental wrote bankers, is to liquidate bank indebtedness and increase working capital besides other corporate purposes.

President Keoughan lists part of the properties of Continental as follows: six refineries with 30,000 barrels daily crude capacity; 600 miles of pipe lines serving the refineries; 30,000 acres of oil and gas leases; 1,700 producing wells; 370,000 acres of undeveloped lands; 30,000 barrels daily net crude production; 988 bulk stations; 477 drive-in service stations, and 1,180 tank cars. Motor equipment is not specified. The company also has a 10-story office building in Denver. It also owns the lands on which its principal distributing stations are built.

The balance sheet of Sept. 30, adjusted to give effect to the new financing, shows current assets of $21,344,019 and current liabilities of $3,838,573. Dec. 31, last, current assets were $20,369,072 and current liabilities $9,704,717. Total assets after deduction of $54,324,614 depreciation and depletion reserve, amounted to $88,960,706 Sept. 30, compared with $83,332,066 Dec. 31.

Earnings for the first nine months of 1927 after expenses including intangible drilling and development costs and inventory adjustments but before depreciation and depletion, amounted to $4,128,242. Earnings before depreciation and depletion, interest and federal income taxes in 1926 amounted to $10,828,925, in 1925 to $9,314,268, and in 1924 to $7,483,344.

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### S. O. California May Pay Stock

NEW YORK, Nov. 5.—San Francisco dispatches carried in New York financial newspapers are to the effect that Standard Oil Co. of California is contemplating a new capital plan. A 10 per cent stock dividend is part of one reported plan and an offering of stock to stockholders at $50 a share is part of another.

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### Warner-Quinlan Earnings

NEW YORK, Nov. 5.—Warner-Quinlan Co. reports earnings of $911,848 after interest but before reserves in the first nine months of 1927. In the third quarter earnings after interest but before reserves amounted to $361,298.

# THE OIL INDUSTRY EXCHANGE

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**L. D. 136**

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Tokheim Oil Tank & Pump Co. 95
Transcontinental Oil Co.
Truscon Steel Co. 1
Tuthill Pump Co.

Union Metal Mfg. Co.
United Filters Corp. 62
U. S. Air Compressor Co.
United States Cast Iron Pipe & Foundry Co
Universal Oil Products Co. 72–73

Vacuum Oil Co.
Viking Pump Co.
Vilter Mfg. Co.
Vogt Machine Co., Henry 107

Wackman Welded Ware Co.
Wadhams Oil Co. 87
Walworth Co.
Warren Refining & Chemical Co. 64
Waukesha Motor Co.
Wayne Co.
Westcott & Greis, Inc. 45
West Coast Lumber Bureau 84
Western Iron & Foundry Co.
Wheaton Brass Works, A. W. 33
Wheeling Steel Corp.
Widdell Engineering Co., Inc.
Williams Sealing Corp. 119
Willock Oil Corp.
Wilson Welder & Metals Co. Inc.

Youngstown Welding Co. The